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AUSTRALIAN ROAD
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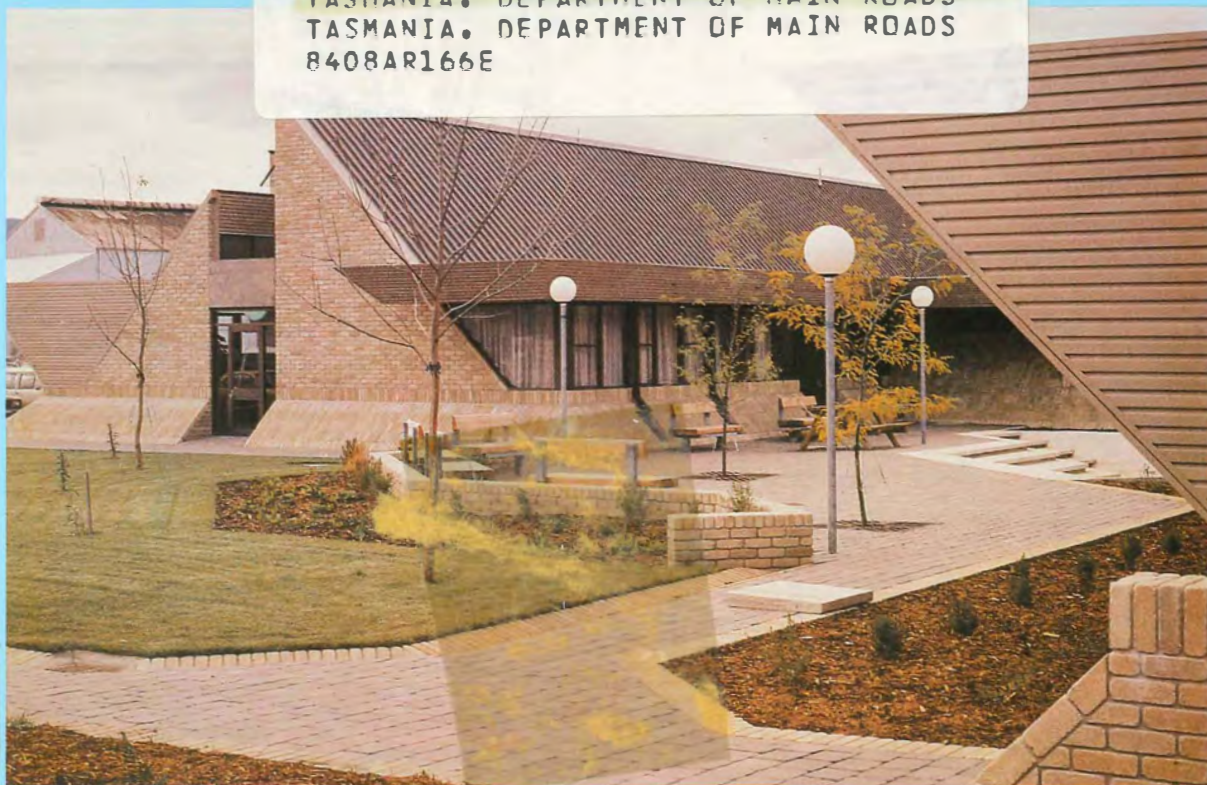
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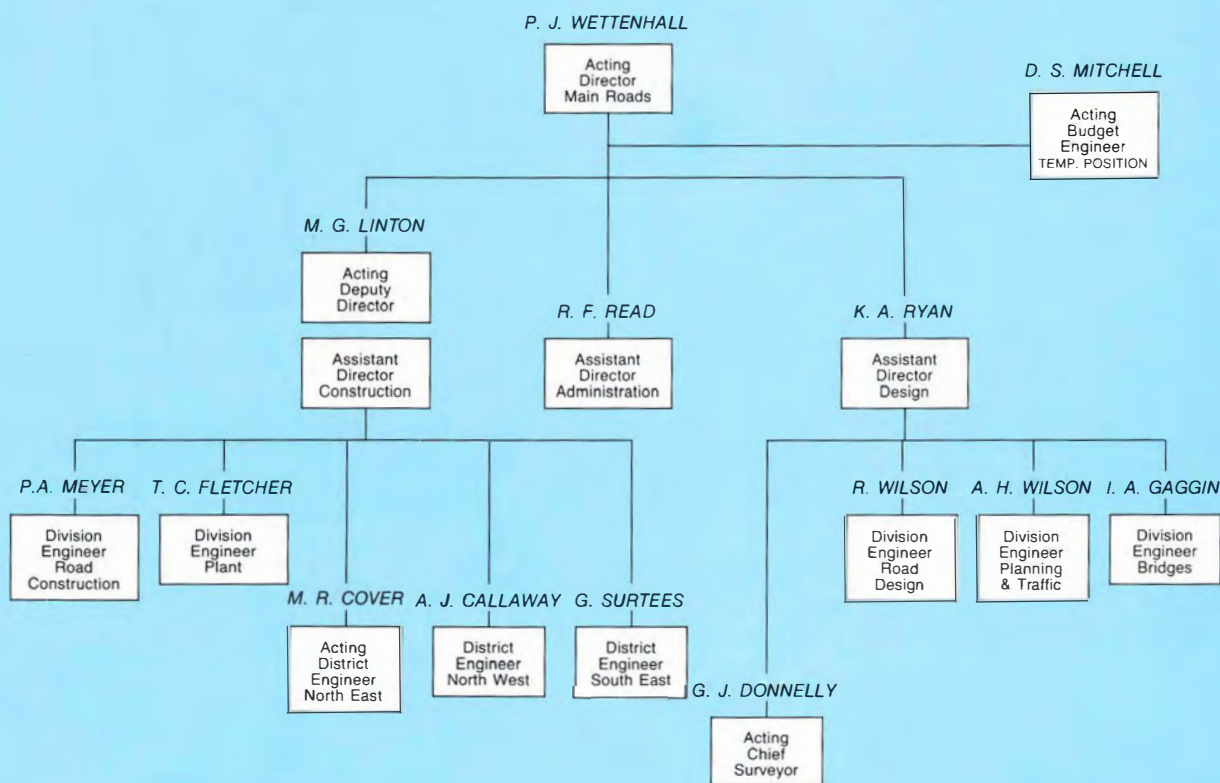
Department of Main Roads
Annual Report
1985-86



ANNUAL REPORT 1985-85
 ALTERNATIVE TITLE: REPORT FOR YEAR
 TASMANIA. DEPARTMENT OF MAIN ROADS
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SOUTH EAST DISTRICT OFFICES



PRINCIPAL OFFICERS



10th Annual Report

CONTENTS



	<i>Page</i>
PRINCIPAL OFFICERS	
HIGHLIGHTS FOR THE YEAR	5
FINANCE	5
MAJOR PROJECTS	14
Major Road Projects Completed Summary	15
Major Bridgeworks Completed Summary	15
NATIONAL ROADS	
South-East District—	
Midland Highway:	
Junction with Lyell Highway at Granton	16
Bridgewater to Bagdad	16
Overtaking Lane near Kempton	16
North-East District—	
Midland Highway:	
Perth to Campbell Town	16
Epping to Powranna	16
Vertical Curve Improvements at Cleveland	16
Powranna Junction	17
Breadalbane to Leighlands Secondary Road	17
Launceston Southern Outlet Road	17
Mt Pleasant to Strathroy	18
Breadalbane to Strathroy	18
Bass Highway:	
Prospect Bypass	19
Prospect Bypass to Pateena Road, Hadspen	21
Pateena Road to Westbury	21
Westbury to Deloraine	21
East Tamar Highway	21
North-West District—	
Bass Highway:	
Deloraine Bypass	22
Don Hill to Forth River	23
Forth River to Ulverstone Bypass	24
Ulverstone to Penguin, Stage I	24
Penguin to Howth	24
Burnie Expressway—Stage B	25
West Park Burnie to Wynyard	27
URBAN ARTERIAL ROADS	
Hobart Statistical Division—	
Algona Main Road	27
Hobart Southern Outlet Road	27
Bellerive Bypass	29
Extension to Lauderdale	29
Tasman Highway/Davey Street Extension	29
Huon Outlet Road	31
Brooker Highway Derwent Park Road Roundabout	31
Hobart Northern Outlet Road	32
Channel Highway	32

Launceston Urban Area—

Launceston Southern Outlet—Urban Section:

Glen Dhu Corridor	32
Kings Meadows Connector	34
East Tamar Outlet	34
West Tamar Highway	34

RURAL ARTERIAL ROADS

South-East District—

Arthur Highway	34
Channel Highway	35
Huon Highway	35
Lake Highway	36
Lyell Highway	36
Tasman Highway	36
Bruny Main Road	37
Fenton Main Road	37

North-East District—

Tasman Highway—

Launceston to Scottsdale	38
Scottsdale to Scamander	38
Scamander to Swansea	39
Scamander River Bridge	39
Falmouth to Chain of Lagoons Link Road	39
West Tamar Highway	40
Blessington Main Road	40
Bridport Main Road	40
Gladstone Main Road	41
Lake Leake Main Road	41
Lilydale Main Road	41

North-West District—

Bass Highway—

Wynyard Bypass Intersection with Mt Hicks Secondary Road	42
Wiltshire Junction to Smithton	42
Smithton Bypass	42
Lake Highway	42
Devonport Main Road	42
Pine Main Road	43
Sheffield Main Road	43
Reeve Street Connector—Burnie	43
Access to Lake Barrington	43

West Coast Link Roads—

Guildford to Hampshire Link Road	43
Que River to Leary's Corner Link Road	44
Smithton to Zeehan Corridor	44

UNCLASSIFIED ARTERIAL ROADS

Hobart City Council—Burnett Street Widening	45
Municipality of New Norfolk—Glenora Road	46
Launceston City Council—Road No. 3 Royal Park Interchange	46

LOCAL ROAD PROJECTS

South-East District—

Tunnack Main Road	46
Lachlan Secondary Road	46

North-East District—

Coles Bay Tourist Road	46
------------------------------	----

North-West District—

Cradle Mountain Tourist Road	47
------------------------------------	----

UNCLASSIFIED LOCAL ROADS

Flagstaff Gully Link Road	47
Glenorchy City Centre Bypass—Stage I	47
Jordan River Bridge at Brighton	48
Lynchford Road, Queenstown	48

ROAD CONSTRUCTION DIVISION

Road Maintenance	48
------------------------	----

LANDSCAPING

National Roads	49
----------------------	----

PLANNING AND TRAFFIC DIVISION

Environmental Studies—Federal and State Government environmental issues specialist studies, archaeological salvage, routine investigations	50
Traffic Services—including Road Data Base, Traffic Counting, Traffic Studies, Accident and hazardous location investigations	50
Right of Way Control—Supervision and Development matters, Public Utility Service Installations in State Roads, <i>Roads and Jetties Act 1935</i> , Proclamations and Classifications, Limited Access Roads, Statutory Planning Scheme matters	51

ROAD DESIGN DIVISION

General Items—Guard Rail/Safety Barriers, Standard Drawings, Specification for the Design of Rural Roads, Computer Design, Departmental Displays and Exhibitions, 'As Is' Road Design, Road Direction Signing, Tourist Signing, Vehicle Permits....	53
---	----

BRIDGE DIVISION

Bridge Design	54
Hydraulic Section—including Launceston Flood Protection Scheme, Road Drainage and Flood Protection, Other Marine Works	55
Bridge Maintenance	57
Jetties, Slipways and Fishing Facilities—	
General Maintenance	58
Construction Work.....	58
Fishing Ports Upgrading.....	59
Currie	59
Kettering	59
Lady Barron	59
Port Arthur	59
St Helens	60
Stanley.....	60
Strahan	60
Triabunna	60

PLANT DIVISION

General	61
Plant Operations.....	61
Training and Driver Testing	61
Vehicle Accidents	61
Apprentices.....	61
Depots and Workshops.....	61
Financial Statements (Annexure D)	63

MATERIALS AND RESEARCH LABORATORY 63

ADMINISTRATION

General	67
Staff	68
Study Courses and Staff Development Program	70
Long Service Awards	70
Industrial	71
Worker's Compensation	72
Computer Information Services Section	72
Industrial Safety	72
Property Acquisitions	73
Contracts	73
Agreements	74
Stores	74
ACKNOWLEDGEMENT	74

ANNEXURES

- A—LOAN FUND EXPENDITURE 1985-86
- B—FINANCIAL ASSISTANCE TO LOCAL GOVERNMENT AUTHORITIES
- C—BITUMINOUS SURFACING COMPLETED 1985-86
- D—ROAD CONSTRUCTION PLANT SUSPENSE ACCOUNT 1985-86
- E—DETAILS OF CLASSIFIED ROADS BY LENGTH AND SURFACE TYPE

HIGHLIGHTS FOR THE YEAR

The record level of works carried out by the Department in 1984-85 continued in 1985-86 and the benefit of the increased funding levels was demonstrated with the opening of the Huon Outlet Road extension from Sandfly S.R. to Vincennes Saddle, the Southern Outlet Road extension bypassing Kingston and Algona M.R. from the Channel Highway to Blackmans Bay.

The need to maintain higher levels of road building activities in urban areas to ameliorate traffic congestion has been recognised and record works programs were achieved in the defined urban areas of Hobart and Launceston. In addition to the works completed in 1985-86, major construction activities continued on the Southern Outlet in Launceston and on the duplication of the Southern Outlet in Hobart. Construction of the Bellerive Bypass commenced during the year.

Major upgrading continued on the National Highway in the North-East and North-West Districts, with tenders being invited for a further eleven projects in 1985-86. The Department continued with its high tender success rate, winning all eleven contracts.

1985-86 marked the start of construction of a fourth major new link road, the Smithton-Zeehan corridor and works continued on :—

- Guildford-Hampshire Link Road
- Que River-Learys Corner Link Road
- Falmouth-Chain of Lagoons Link Road

Rural road upgrading continued at a high level and some recognition of the responsibilities of State and Local Government for arterial and local roads respectively was given, with the classification of Tea Tree Road and the declassification of the Elderslie S.R.

Increased public opposition to the launching of major new projects is creating the need for the Department to develop more sophisticated methods for its planning operations by identifying and fully investigating the more sensitive areas of the schemes and developing generally acceptable proposals. During the year, considerable staff effort was devoted to planning and design for:—

- The Davey Street Extension/Tasman Highway Extension project in Hobart.
- The Pontville-Brighton Bypass.
- The Bass Highway between Prospect Vale and Deloraine.
- The Bass Highway between Penguin and Howth.

General agreement for the schemes being developed is obtained from the necessary State and Commonwealth Authorities, interested bodies and affected landowners before construction commences. However, uninformed public criticism of new works is growing and must be answered at the expense of the more productive Departmental staff activities.

FINANCE

GENERAL

The Department has continued to monitor the rising cost of its operations by the use of a Road System Price Index. This is a composite index produced by combining indices for road construction, road maintenance and bridgeworks.

During 1985-86 the Road System Price Index rose by 5.3 per cent while the Consumer Price Index rose by 8.6 per cent for Hobart. The lower increase for the road index appears to be due to very moderate increases in wages and salaries for Departmental employees together with substantial reductions in prices for petroleum products.

It is envisaged that wages and salary increases in 1986-87 will continue to be moderate, but the prices of petroleum products will rise significantly. Consequently, the rate of inflation affecting the operations of the Department in 1986-87 has been estimated at around 7 per cent.

A comparison between the Road System Price Index and the Consumer Price Index adjusted to the same base year, is set out below. In addition, an index produced by averaging the road construction indices of the State Road Authorities in Victoria and South Australia has been included. The table shows that inflationary pressures have forced costs incurred by road construction authorities to escalate generally at higher rates than the Consumer Price Index.

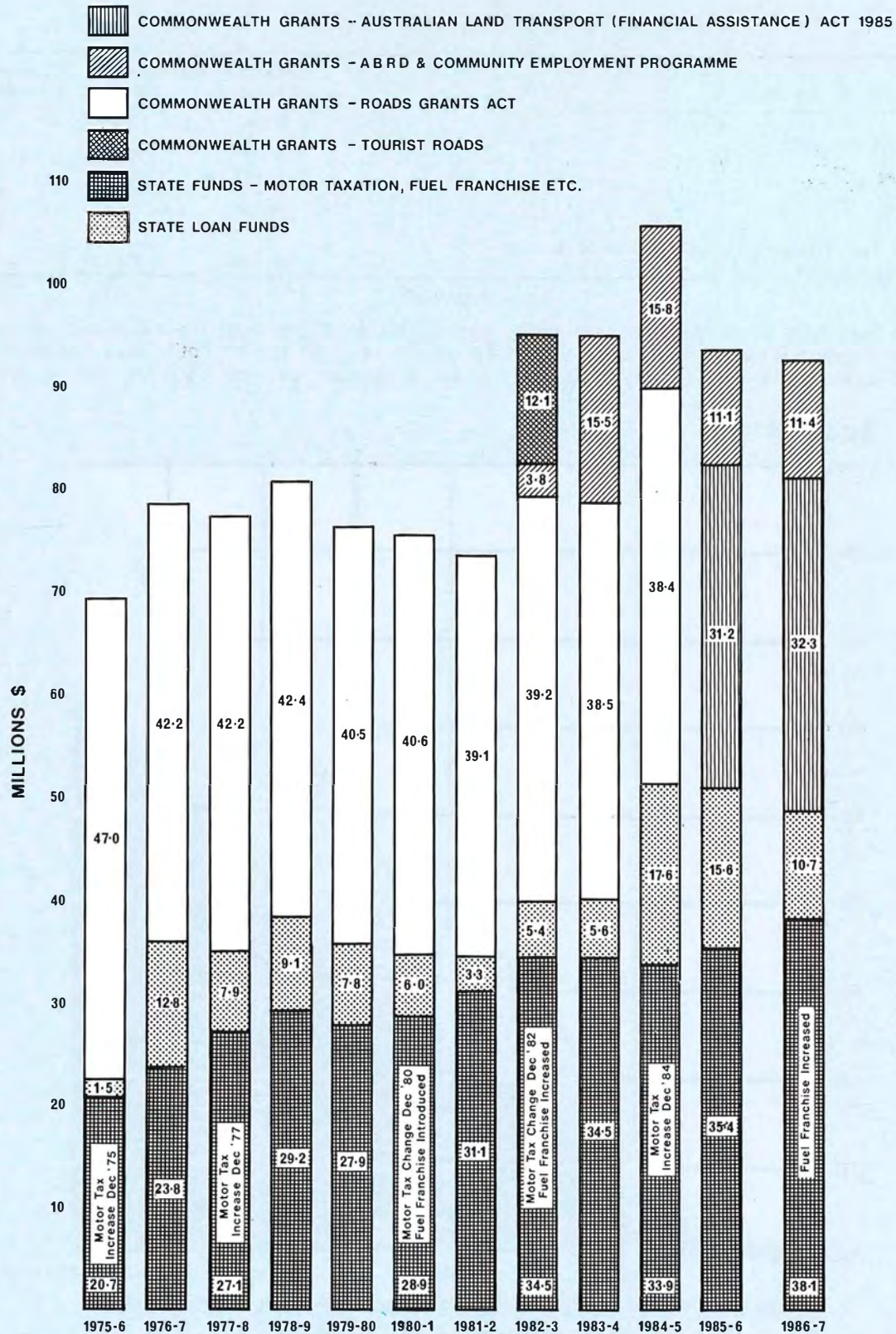
COMPARISON BETWEEN ROAD CONSTRUCTION PRICE INDICES AND THE CONSUMER PRICE INDEX

Date 30 June	DMR		Average Vic/SA SRA's		CPI	
	Index Number	Annual Change %	Index Number	Annual Change %	Index Number	Annual Change %
1970.....	100.0	....	100.0	....	100.0	....
1972.....	122.0	10.1	119.9	7.8	111.3	6.4
1974.....	162.4	21.4	165.8	22.5	136.8	14.7
1976.....	233.6	17.2	226.9	16.2	183.0	14.9
1978.....	283.3	7.5	268.1	2.9	224.0	8.3
1980.....	337.6	12.3	331.1	14.9	268.3	10.1
1981.....	374.1	10.8	372.5	8.2	292.1	8.9
1982.....	421.9	12.8	422.3	13.4	321.0	9.9
1983.....	451.0	6.9	465.6	10.3	356.3	11.0
1984.....	487.5	8.1	513.0	10.2	370.5	4.0
1985.....	518.6	6.4	533.4	4.0	395.3	6.7
1986.....	546.1	5.3	N.A.	N.A.	430.9	8.6

The Department receives grants from the Commonwealth under two Acts,—the *Australian Bicentennial Road Development Trust Fund Act 1982* (A.B.R.D.) and the *Australian Land Transport (Financial Assistance) Act 1985*, (A.L.T.P.). Under both these Acts motorists throughout Australia contribute to the cost of maintaining and improving the road system by payment of levies and excise on motor fuel. Motorists pay a levy of 2 cents per litre to finance the Australian Bicentennial Road Development Program and an indexed share of the existing excise charges on motor spirit and diesel fuel is paid into the A.L.T.P. Trust Fund. The initial rate has been set at 3.66 cents per litre. The Australian Government guaranteed a total of \$810 million during 1985–86 with \$776.6 million to be divided between the States and Territories for roadworks. Tasmania's share was originally budgeted to be \$35.9 million. However the allocation at 30 June 1986 amounted to \$31.216 million.

Approximately 10 per cent of arterial and local road funds in the A.L.T.P. Trust Fund remain unallocated for expenditure after 30 June 1987. Pursuant to Section 19 of the Act, the Minister for Transport established an independent Committee of Inquiry into the distribution of Federal Road Grants. The Independent Committee was required, inter alia, to recommend a proportional distribution of the unallocated funds to the States and Territories. The Department of Main Roads co-operated with other Departments in the preparation and presentation of a submission by Tasmania to the Committee in an endeavour to at least retain Tasmania's present share of funds.

Tasmania's share of Commonwealth road funds was historically 5 per cent of the total Australian allocation. In recent years this has been eroded to 4.57 per cent, and in 1985–86, Tasmania received 4 per cent of the total. The following table shows the grants allocated since 1980–81.



ANNUAL ROAD FUNDS RECEIVED
EXPRESSED IN JUNE 1986 VALUES

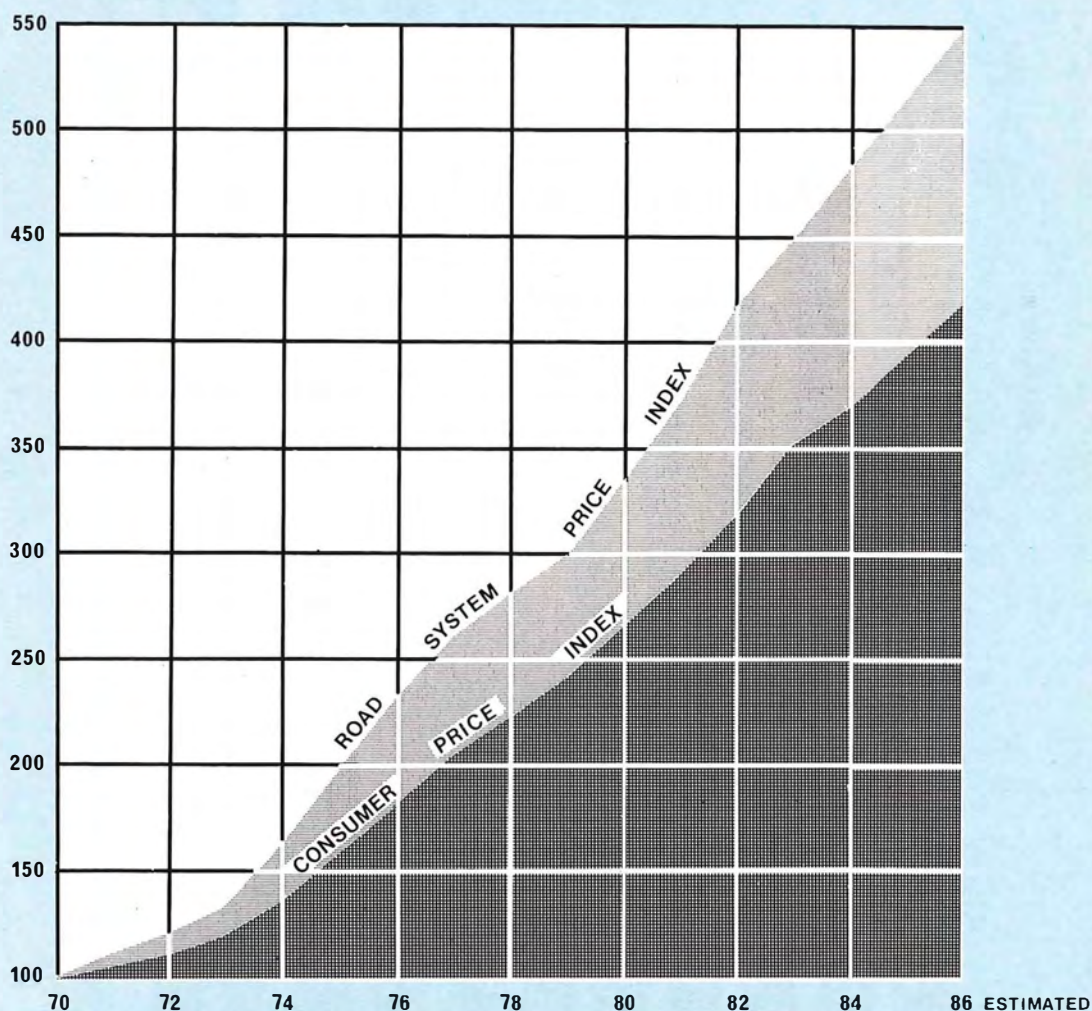
COMMONWEALTH ROAD GRANTS SINCE 1980-81

<i>Appropriating Act and Year</i>	<i>Tasmania's Allocation</i>	<i>Total Australian Allocation</i>	<i>Tasmania's Percentages</i>
	(\$'000)	(\$'000)	
Road Grants Act 1981—			
1980-81.....	21 700	477 912	4.54
1981-82.....	30 243	661 965	4.57
1982-83.....	32 406	709 301	4.57
1983-84.....	34 349	751 822	4.57
1984-85.....	36 424	797 240	4.57
Australian Land Transport (Financial Assistance) Act 1985—			
1985-86.....	31 216	776 600	4.00p.

p = provisional

The bar chart below illustrates the funds received by the Department for roadworks. In each year, the funds have been adjusted to June 1986 values using the Department's road system price index. The sensitivity of State revenue to rises in motor taxation and fuel franchise rates is clearly visible.

INDEX



COMPARISON OF DEPARTMENT'S ROAD SYSTEM PRICE INDEX
WITH CONSUMER PRICE INDEX

COMMONWEALTH GRANTS FOR ROADS

Under the *Australian Land Transport (Financial Assistance) Act 1985* and the *Australian Bicentennial Road Development Trust Fund Act 1982* the Commonwealth provided financial assistance to the States for roads in the financial year 1985-86. The total grants to Tasmania were \$42 092 241 made up as follows:—

	<i>A.L.T.P. Act 1985</i>	<i>A.B.R.D. Act 1982</i>
	\$	\$
National Roads—Construction and Maintenance.....	13 056 600	3 321 999*
Rural Arterial Roads—Construction and Maintenance	4 377 800	977 305*
Urban Arterial Roads—Construction and Maintenance	3 381 600	3 249 418*
Local Roads—Construction and Maintenance.	<u>10 400 000</u>	<u>3 327 519*</u>
	31 216 000	10 876 241

* For road construction purposes only.

Under the *Australian Land Transport (Financial Assistance) Act 1985* Tasmania anticipates receiving approximately \$32 400 000 in 1986-87 made up as follows:—

	\$
National Roads—Construction and Maintenance	14 250 000
Rural Arterial Roads—Construction and Maintenance	3 800 000
Urban Arterial Roads—Construction and Maintenance	4 000 000
Local Roads—Construction and Maintenance.	<u>10 350 000</u>
	32 400 000

Under the *Australian Bicentennial Road Development Trust Fund Act 1982* Tasmania anticipates receiving approximately \$14 700 000 in 1986-87 made up as follows:—

	\$
National Roads—Construction	4 200 000
Rural Arterial Roads—Construction	2 160 000
Urban Arterial Roads—Construction	5 440 000*
Local Roads—Construction	<u>2 900 000</u>
	14 700 000

* includes \$2 558 000 payable to the Metropolitan Transport Trust for Urban Public Transport.

SPECIAL COMMONWEALTH FUNDS

Funds for the construction of the Second Hobart Bridge provided by the Commonwealth amounted to \$3 922 714 as compared with \$847 487 in 1984-85.

ROAD FUNDS FROM STATE RESOURCES

Motor Taxation—receipts amounted to \$18 186 254 as compared with \$17 998 573 in 1984-85, an increase of 1.04 per cent.

Public Vehicle Fees—fees collected during the year amounted to \$133 179 as compared with \$170 318 in 1984-85 a decrease of 21.81 per cent.

Petroleum Products Business Franchise Licence Fees—receipts amounted to \$15 576 233 as compared with \$12 211 571 in 1984-85, an increase of 27.55 per cent.

Loan Funds—funds provided to the Department for roads, bridges and associated works, upgrading of fishing ports, jetties and facilities for fishermen and the Launceston Flood Protection Scheme totalled \$16 977 318 a decrease of 6.22 per cent when compared with the previous year.

FUNDS PROVIDED BY OTHER DEPARTMENTS AND AUTHORITIES

Payments received by the Department for works and services carried out for other Departments and Authorities amounted to \$1 169 071 as compared with \$1 751 651 in 1984-85. The Department was involved with minor works for the Construction, Education, Forestry, Health, Housing and Transport Departments, Hydro-Electric Commission, Metropolitan Water Board and National Parks and Wildlife Service.

STATEMENT OF SOURCE AND APPLICATION OF FUNDS

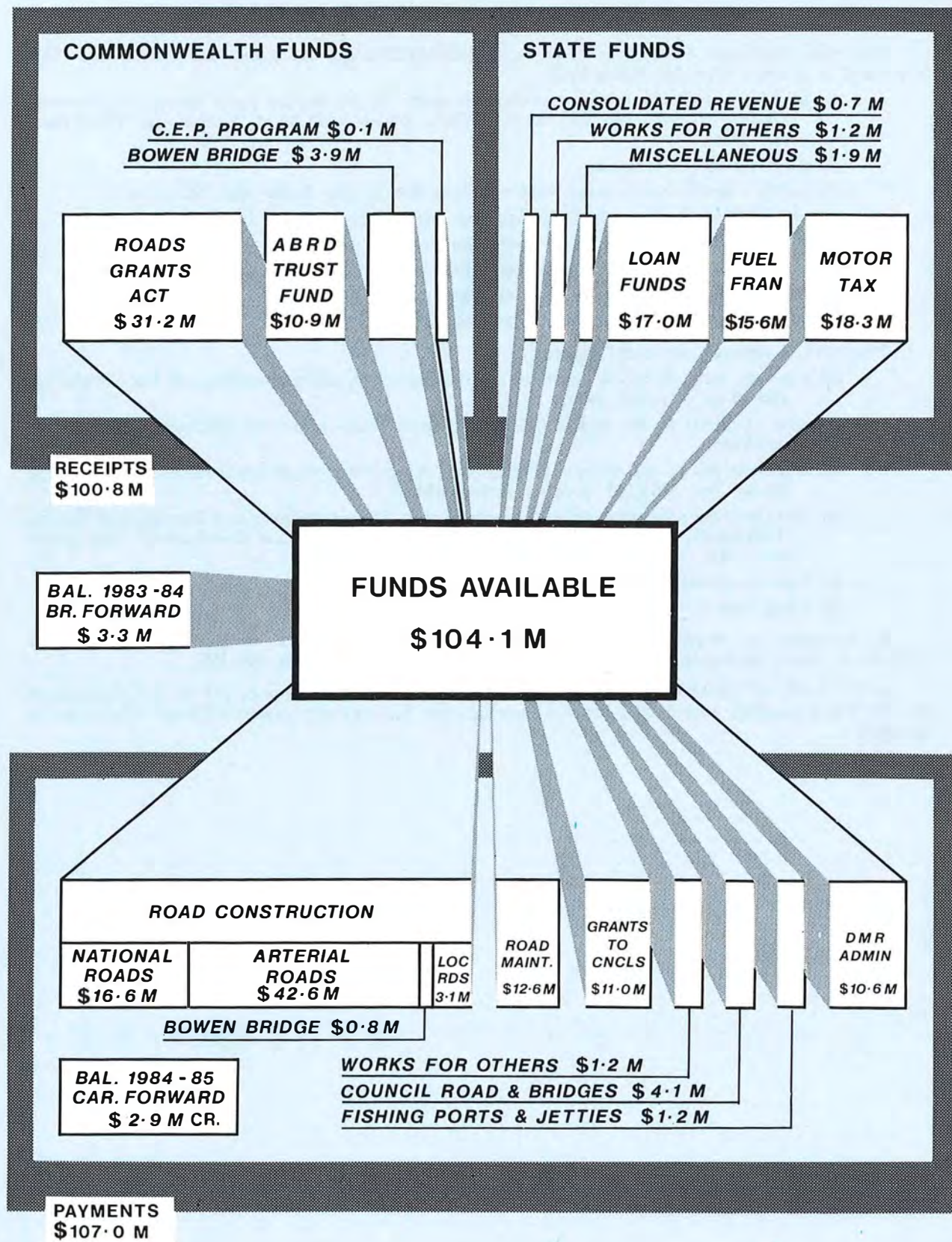
As shown in the following statement, the funds obtained during 1985-86 from all sources amounted to \$107 195 935 an increase of 3.2 per cent as compared with 1984-85.

SOURCE OF FUNDS

1984-85		1985-86
\$		\$
31 636 900	State Motor Taxation, Public Vehicle Fees, Fuel Franchise and Miscellaneous Receipts	35 811 109
49 962 738	Commonwealth Grants for Roads	42 092 241
18 103 694	State Loan Funds	16 977 318
1 114 684	Special Commonwealth Funds	4 041 255
1 316 216	Consolidated Revenue Fund	902 054
1 751 651	Funds Provided by other Departments and Authorities	1 169 071
....	Net decrease in funds carried forward	6 202 887
103 885 883	TOTAL	107 195 935

APPLICATION OF FUNDS

1984-85			1985-86
\$		\$	\$
80 744 294	State Highways Trust Fund—		
13 902 295	Roadworks	88 278 920	
94 646 589	Bridgeworks	10 397 317	98 676 237
1 000 000	Other Loan Funds—		
185 045	Administrative Costs Refunded to Consolidated Revenue Fund	1 080 000	
53 161	Jetties and Facilities for Fishermen	157 548	
1 208 661	Launceston Flood Protection Scheme	200 000	
2 446 867	Upgrading of Fishing Ports	969 770	2 407 318
847 487	Special Commonwealth Funds—		
187 907	Second Hobart Bridge	3 922 714	
79 290	Community Employment Program	89 291	
1 114 684	Gordon Below Franklin Alternate Works	29 250	4 041 255
525 878	Consolidated Revenue Fund—		
332 146	Departmental Administration	188 252	
92 053	Workers' Compensation (Other Departments)	345 782	
366 139	Repairs to Jetties and Facilities for Fishermen	82 126	
1 316 216	Other Miscellaneous Expenses	285 894	
1 751 651	Works for other Departments and Authorities .....	....	902 054
2 609 876	Net increase infunds carried forward .....	....	....
103 885 883	TOTAL		107 195 935



RECEIPTS & PAYMENTS 1985 - 86

STATE HIGHWAYS TRUST FUND

The State Highways Trust Fund Account is established under the *Roads and Jetties Act 1935*. The fund is credited with the following:—

- (a) all grants made by the Commonwealth under the *Australian Land Transport (Financial Assistance) Act 1985* and the *Australian Bicentennial Road Development Trust Fund Act 1982*;
- (b) all State motor taxation;
- (c) public vehicle fees imposed under section 20A of the *Traffic Act 1925*;
- (d) contribution by Municipal Councils for the maintenance of classified roads;
- (e) receipts from sale of stores (other than plant);
- (f) any moneys provided by Parliament for the purposes of the fund;
- (g) profits on contracts awarded to the Department; and
- (h) such other moneys (if any) as the Treasurer may direct.

The fund is debited with the following:—

- (a) expenses incurred in the construction, reconstruction and maintenance of State Highways and other classified roads;
- (b) costs incurred in the maintenance of Council roads which the Minister has agreed to subsidise;
- (c) contributions to the Bruny, Flinders and King Island Municipalities of portion of the Motor Tax collected in those Municipalities;
- (d) all expenditure incurred under the provisions of the *Australian Land Transport (Financial Assistance) Act 1985* and the *Australian Bicentennial Road Development Trust Fund Act 1982*;
- (e) costs of stores and materials (other than plant); and
- (f) repair and renewal of bridges on Council roads.

A statement of receipts and payments for the State Highways Trust Fund Account for 1985-86 is shown hereunder together with the corresponding figures for 1984-85.

A net profit of \$620 695 was achieved on the fourteen contracts completed by the Department and for which accounts were finalised in this financial year. This amount is included under Miscellaneous Receipts.

STATE HIGHWAYS TRUST FUND
STATEMENT OF RECEIPTS AND PAYMENTS
for the year ended 30 June 1986

1984-85 \$		1985-86 \$
	<i>Receipts</i>	
711 857	Balance brought forward, 1 July.....	3 321 733
49 962 738	Commonwealth Grants for Roads.....	42 092 241
17 998 573	Motor Taxation.....	18 186 254
170 318	Public Vehicle Fees.....	133 179
12 211 571	Petroleum Products Business Franchise Licence Fees.....	15 576 233
17 103 694	State Loan Funds.....	15 897 318
926 261	Second Hobart Bridge.....	3 952 418
709 807	Consolidated Revenue Fund.....	675 533
268 438	Community Employment Program.....	127 559
79 290	Gordon River Power Development Compensation.....	29 250
1 256 438	Miscellaneous Receipts.....	1 915 444
101 398 985	TOTAL.....	101 907 162
	<i>Payments</i>	
	Roads and Bridgeworks—	
19 479 232	National Roads.....	21 978 333
58 528 934	Arterial Roads.....	58 432 484
16 638 423	Local Roads.....	18 265 420
94 646 589		98 676 237
	Associated Works—	
926 261	Second Hobart Bridge.....	3 952 418
1 485 759	Water Transport Facilities.....	1 209 444
617 754	Miscellaneous Consolidated Revenue Fund Expenditure.....	593 408
53 161	Launceston Flood Protection.....	200 000
268 438	Community Employment Program.....	127 559
79 290	Gordon River Power Compensation Expenditure.....	29 250
98 077 252		104 788 316
3 321 733	Balance carried forward 30 June.....	(2 881 154)
101 398 985	TOTAL.....	101 907 162

LOAN FUND EXPENDITURE

The loan funds of \$16 977 318 allocated to the Department for roads, bridges and other works, were applied as follows:—

1984-85 \$		1985-86 \$
15 656 827	Roads and Bridges.....	14 570 000
2 446 867	Other Works.....	2 407 318
18 103 694	TOTAL.....	16 977 318

A schedule of expenditure items and amounts is shown in Annexure A. It should be noted that the loan fund amounts for the road and bridge items listed in the schedule were in most cases supplemented by funds from the State Highways Trust Fund.

FINANCIAL ASSISTANCE TO LOCAL GOVERNMENT AUTHORITIES

Under the provisions of the *Australian Land Transport (Financial Assistance) Act 1985*, the *Australian Bicentennial Road Development Trust Fund Act 1982* and the *Roads and Jetties Act 1935*, the Department made direct grants to local government authorities based on a formula approach for construction and/or maintenance of local roads and approved projects for arterial roads controlled by Councils. The direct grants to Councils totalled \$10 960 912, an increase of 9.03 per cent to the amount of the direct grants provided in 1984-85.

In addition to the direct grants, the Department also provided indirect financial assistance to local government authorities. Under the provisions of the *Roads and Jetties Act 1935* the Department financed and carried out the repair and renewal of bridges on Council roads. The Department maintained four Council Roads which have been declared as subsidised roads and provided funds to the National Parks and Wildlife Service and the Hydro-Electric Commission for work on some local roads. During the year, the Department performed bridgeworks for the City of Glenorchy and roadworks for the Municipality of Clarence, in relation to the Glenorchy City Centre Bypass and Flagstaff Gully Link Road, respectively. The indirect financial assistance to Councils totalled \$4 073 469, an increase of 41.40 per cent over the preceding year.

The total of direct grants and indirect financial assistance to Councils was \$15 034 381 an increase of 16.24 per cent to 1984-85. The amounts of direct grants and indirect financial assistance to Councils for the various categories of roads and works are shown in Annexure B.

MAJOR PROJECTS

The planning, design and construction Divisions of the Department, with assistance from technical and administrative support sections, organise the provision of designs, money and materials for the construction or reconstruction of road facilities identified in the Department's Annual Program of works and the Forward Planning Programs.

The social and monetary costs of constructing roads on new alignments are often very high, particularly in built up urban areas where not only a very high standard road is required but also the cost of property acquisitions can run into millions of dollars. Such high acquisition costs make very significant inroads into available funds for physical road construction and have a consequential deleterious effect on the employment of labour on roadworks.

Increasing the safety and capacity of the existing road network would be a much more economical compromise. However, the local government pressure, particularly in the major urban centres at Launceston and Hobart is increasing the complexity of determining compromise solutions and in fact Road Transport Studies in those areas include many expensive new roads demanding substantial funds to implement.

At the same time the Government's desire to construct new roads in isolated areas of the State to encourage the general and tourist potentials of those areas is creating a new avenue for the expenditure of road funds. Construction of the following three projects, commenced in 1984-85, is now well advanced and proceeding according to schedule:—

- Guildford-Hampshire Link Road
- Que River, Murchison Highway to Learys Corner, Cradle Mountain Tourist Road, Link Road
- Falmouth-Chain of Lagoons Link Road.

In addition, construction of the new link road between Smithton and Zeehan commenced in 1985-86.

It is essential that the funding for these particular projects be continued from sources other than those used for ongoing improvements and maintenance of the existing classified road system if current standards are to be maintained or improved. In both 1984-85 and 1985-86 Loan Funds were made available for these projects.

The Department's objective for 1985-86 was to continue to plan for and to construct improvements on the Classified Road system in accordance with the Government's Road Policy and Department forward programs.

The Department's objective has been successfully achieved. Not only has the planned program of projects allocated to the Day Labour workforce been undertaken but also the Department has again been successful in winning the majority of contracts for which tenders have been called. This means that the D.M.R. is more than competitive in relation to its road construction costs.

Details of major road and bridge construction achievements follow:—

MAJOR PROJECTS COMPLETED

MAJOR ROAD PROJECTS COMPLETED—SUMMARY

Road	Section	Cost
		\$ m
NATIONAL ROADS		
<i>North-West District—</i>		
Bass Highway	Duplication Don Hill to Forth River Stage 1	8.47
	Burnie Expressway Stage B:	
	(a) High Street to North Terrace	1.33
	(b) View Road to High Street (incorporating Jones Street Bridge contract)	1.98
URBAN ARTERIAL ROADS		
<i>South-East District—</i>		
Algonia Main Road	Stage 2—Junction works	0.55
Hobart Southern Outlet Road	Duplication—Zomay Avenue to Olinda Grove (including the Olinda Grove interchange)	3.35
	Kingston Extension to Summerleas Road and Channel Highway	2.07
Huon Outlet Road	Sandfly to Vines Saddle	7.55
<i>North-East District—</i>		
Glen Dhu Corridor	Service Road Contract	0.80
RURAL ARTERIAL ROADS		
<i>South-East District—</i>		
Lake Highway	Miena to Marlborough Highway	1.41
Lyell Highway	New Norfolk to Fenton Main Road Junction	7.46
Bruny Main Road	Adventure Bay Turn Off towards Lennon Main Road (2.5 kilometres completed)	1.06
<i>North-East District—</i>		
Tasman Highway	Waverley to Nunamara	3.65
<i>North-West District—</i>		
Lake Highway	Golden Valley-Breona (7.6 kilometres completed)	1.63

MAJOR BRIDGEWORKS COMPLETED—SUMMARY

Bridge	Road and Section	Cost to 30.6.86
		\$ m
NATIONAL ROADS		
<i>North-West District—</i>		
Claytons Rivulet Culvert	Bass Highway-Forth River to Ulverstone	0.82*
View Road to High Street including Jones Street Underpass with	Bass Highway-Burnie Stage 'B'	Included with roadworks
URBAN ARTERIAL ROADS		
<i>South-East District—</i>		
Kingston Interchange Underpass	Southern Outlet Road-Duplication to Kingston	0.44
Olinda Grove Overpass	Southern Outlet Road-Duplication to Kingston	0.56
Zomay-Olinda Grove Traffic Barriers	Southern Outlet Road-Duplication to Kingston	0.25
<i>North-East District—</i>		
Thistle Street Footbridge	Launceston Southern Outlet Road-Glen Dhu Corridor	0.21
RURAL ARTERIAL ROADS		
<i>North-East District—</i>		
Yarmouth Creek Bridge	Tasman Highway-Scottsdale to Scamander	0.24
Old Billy Creek	} Falmouth-Chain of Lagoons Link Road	0.18
Four Mile Creek Culvert		0.31
Lumera Creek Culvert		0.15

* Includes costs of culvert, extensive service relocations, supervision, and supply of crown units.

NATIONAL ROADS SOUTH-EAST DISTRICT

MIDLAND HIGHWAY

JUNCTION WITH LYELL HIGHWAY AT GRANTON

Design

A minor re-design of this junction was begun to enable improvements to be made during 1986-87 after the removal of an H.E.C. tower. The improvements will reduce the waiting time for vehicles joining the Midland Highway from the Lyell Highway.

BRIDGEWATER TO BAGDAD

Planning

In order to determine the most appropriate location for a future bypass of Pontville and Brighton it is necessary to examine all options for the future National Highway between Bagdad, which must also be bypassed, and the western shore of the Derwent River.

Comparison of a large number of alternative alignments both east and west of the existing highway and linking with Derwent River crossings at various locations between Bridgewater and the Bowen Bridge is being undertaken. Brighton is a rapidly expanding municipality and many of the options previously considered have now been eliminated by development. Major constraints have been identified on all options and the exercise in progress is to identify the most suitable highway alignment with minimal impact on residential and industrial development.

OVERTAKING LANE NEAR KEMPTON

Design

The overtaking lane will commence just north of the southern Kempton Junction and will extend to the existing climbing lane on Constitution Hill.

Detailed design (2.5 kilometres) was commenced and is proceeding so that contract plans can be prepared.

NORTH-EAST DISTRICT

MIDLAND HIGHWAY

PERTH TO CAMPBELL TOWN

Design

The investigations of substandard alignment was completed with the identification of five major sections in need of improvement. Design was let to a consultant for the three major sections along which overtaking was hampered by short vertical curves.

EPPING TO POWRANNA

Design

The 9.2 kilometre section between Epping Forest and Powranna is being designed and documented to encompass two contracts viz:—

- a section of 2 kilometres; and
- a section of 7.2 kilometres.

The improvements will consist of removing crests to provide sight distance for overtaking and the construction of overtaking lanes.

VERTICAL CURVE IMPROVEMENTS AT CLEVELAND

Construction

The contract for the improvement of 2.14 kilometres of road currently adversely affected by vertical curves was let late in the financial year with the D.M.R. being the successful tender.

Some preliminary works commenced but major works were suspended due to wet conditions. It is anticipated this work will be completed in January 1987. The contract price is \$765 880.

Expenditure in 1985-86 amounted to \$0.090 million.

POWRANNA JUNCTION

Work on the Powranna Junction section (1.08 kilometres) was also advertised during the year and work is expected to commence early in the next financial year.

BREADALBANE TO LEIGHLANDS SECONDARY ROAD (PERTH BYPASS)

Design

A preliminary Overview Report has been prepared which outlined options for upgrading this section of the Midland Highway and for providing a bypass of Perth. An examination of the options is continuing.

LAUNCESTON SOUTHERN OUTLET ROAD (including Urban Arterial section for this general report)

1. Historical Background

In the Launceston Area Transportation Study Report presented in 1968, the recommended plan envisaged the construction of a number of new expressways and connecting roadways built to expressway standard. Included was a four lane divided roadway linking Melbourne Street in Glen Dhu with the Midland Highway south of Franklin Village.

The subsequent Launceston Transportation Revision 1976-77 endorsed this recommendation and proposed that construction should commence in 1981-82. The date was, in fact, brought forward in 1980 by the Committee which was established to implement the Launceston Transport Revision program.

The Launceston Southern Outlet Road would provide a new access to the city from both the Midland and Bass Highways, and consist of a series of projects, namely:—

- Glen Dhu Corridor—from Bathurst and Wellington Streets to the Glen Dhu Connector between Shamrock and Melbourne Street.
- Southern Outlet (Urban Section)—from the Glen Dhu Connector to Mt Pleasant Interchange (New junction of Bass and Midland Highways).
- Southern Outlet (Rural Section, First Stage)—Mt Pleasant Interchange to the Midland Highway at Strathroy.
- Southern Outlet (Rural Section, Second Stage)—Strathroy to Breadalbane. Also dual carriageway.
- Prospect Bypass—Mt Pleasant Interchange to existing highway at Prospect Vale. National Highway project adopted by Launceston Transportation Revision Implementation Co-ordination Committee to complete new major road network.

It was determined by the Launceston Transportation Revision Implementation Co-ordination Committee, which consists of representatives of the D.M.R. Transport Tasmania, Port of Launceston Authority, Tamar Regional Master Planning Authority, and Local government authorities, that the whole section of the new road between Glen Dhu and Strathroy would be completed as one stage.

2. Funding and Execution of Work

The sections of the Launceston Southern Outlet Road south and west of the Mt Pleasant Interchange form part of the National Highway and have been designed and constructed to National Highway standards. North of Mt Pleasant the road forms part of the urban arterial network. The bulk of the funding has been derived from Commonwealth National Roads and Arterial Roads Grants, including Australian Bicentennial Road Development funds. Work on the Outlet Road has been carried out by both contract and direct labour. However, under current legislation all major work on the National Highway must be by contract.

3. Work to date

The first stage of the outlet road between Glen Dhu and Strathroy commenced early in 1981 and comprised the construction of 7.4 kilometres of dual carriageway landscaped highway and included three major bridges, namely the Mount Pleasant Interchange, the Westbury Road Overpass and the Glen Dhu Overpass. The construction of several large concrete pipe culverts and a pedestrian underpass was also required.

4. Work in progress

Work is currently in progress on the final stages of the total project and includes:—

- The extension southwards from Strathroy to Breadalbane.
- The Prospect Bypass westward from the Mt Pleasant Interchange to Prospect Vale where it will link up with the existing Bass Highway.
- The urban arterial link northward via the Glen Dhu Corridor to Bathurst and Wellington Streets.

Details of current projects on the National Highway follow.

(NOTE: Details of the Urban Arterial Road projects appear under the Urban Arterial Roads section of this report.)

MT PLEASANT TO STRATHROY

This section of the Outlet was included in the section opened to traffic in February 1985, from the Glen Dhu Interchange to the temporary connection into the old Midland Highway at Jingers Creek, Strathroy. The National Highway and Urban Arterial sections were opened concurrently.

In 1985-86 funds were made available for the provision of batter protection, for meeting carryover costs from 1984-85 and for consultants fees associated with the Kings Meadows connector. Expenditure for the year amounted to \$0.338 million and the total cost of this section to 30 June 1986, amounted to some \$10.07 million.

BREADALBANE TO STRATHROY

This project forms part of the National Highway and will comprise a divided dual lane carriageway. It is being constructed in two stages each of which is by separate contract.

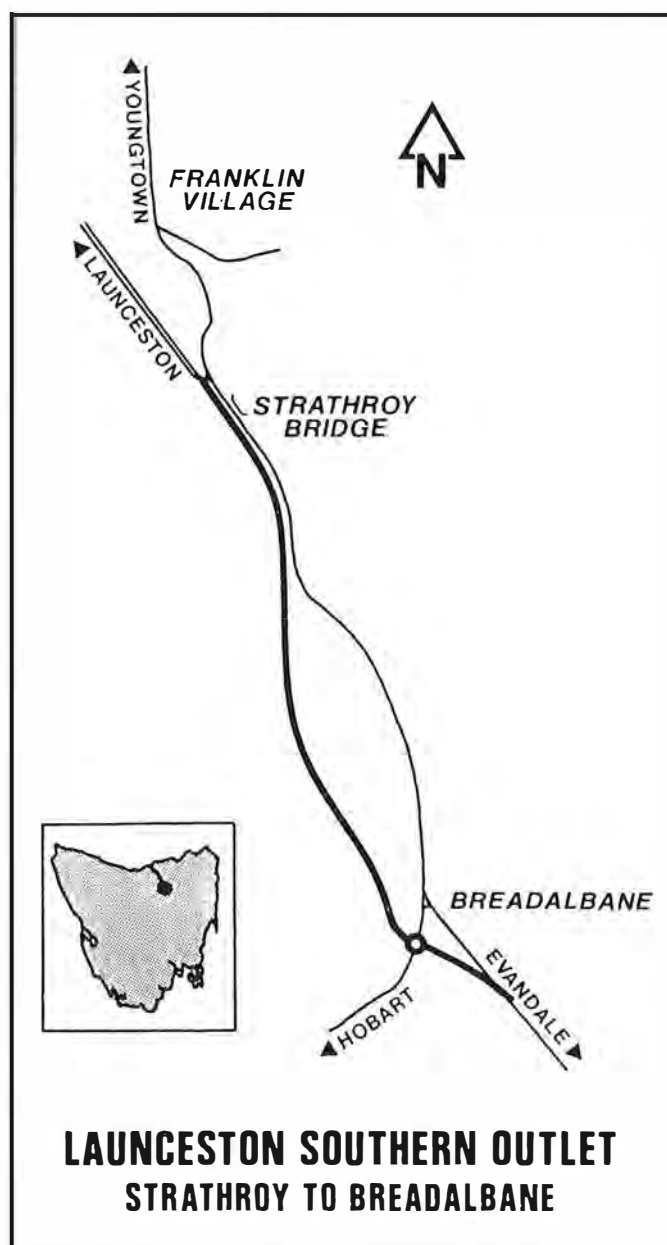
The contract for the first section was let to Costain Pearson Bridge in March 1985. It involves the construction of 3.7 kilometres of roadworks. Construction difficulties were experienced by the contractor soon after the commencement of work. These included unseasonably wet conditions, unexpected soft foundations and excess rock excavation. However, progress was made during the year to the stage where earthworks and drainage were 95 per cent completed. Pavement work was also commenced with the placing of some sub-base on the completed formation. The contract price is \$3.8 million.

Expenditure in 1985-86 amounted to \$2.245 million and the total expenditure to 30 June 1986 was \$3.092 million.

The second contract provides for the construction of the Breadalbane Junction of the Southern Outlet Road with the existing Midland Highway and the Evandale Main Road. The design for the roundabout was completed during the year and tenders were called for the construction.

The D.M.R. was awarded the contract towards the end of the financial year but, due to the wet conditions, works was suspended. The contract price is \$1.13 million.

Completion is anticipated at about the same time as the main carriageway in mid 1987.



BASS HIGHWAY

PROSPECT BYPASS

Design

The design for the Prospect Bypass was completed and plans have been prepared for the final contract of 3 kilometres. A roundabout was designed and constructed at the junction with the Velodrome access road. A design to improve the Mount Leslie Road Junction was also prepared.

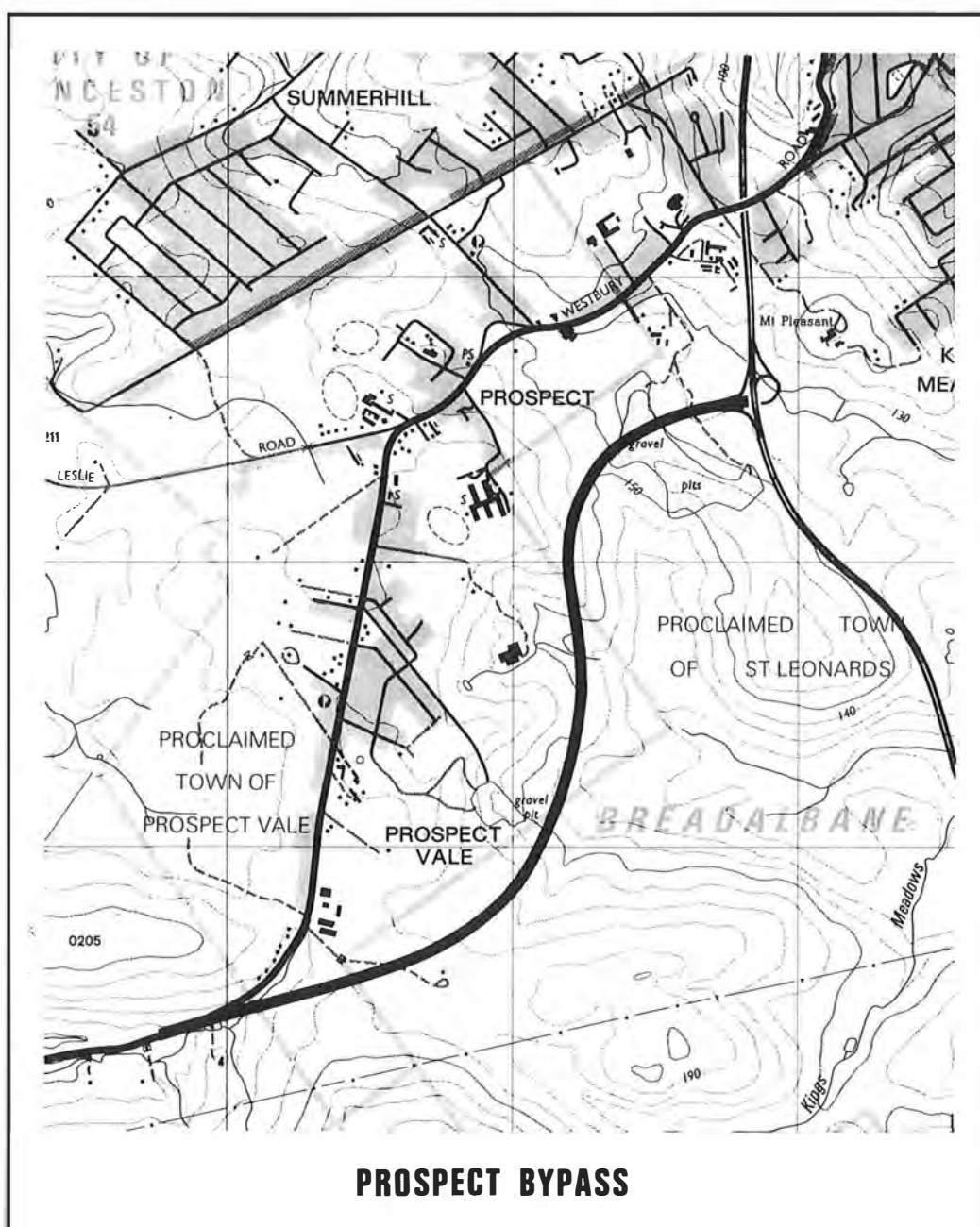
Construction

This project is an extension of the Launceston Southern Outlet Road west from the Mt Pleasant Interchange. The length of the bypass is about 3.0 kilometres and has been split into a 3 stage contract. The Stage I contract consists of earthworks and drainage for the 1.5 kilometre section (known as the Western end) between the Bass Highway and 'midway' in the Bypass.

The Stage II contract consists of the 1.22 kilometre section (known as the Eastern end) between Mt Pleasant Interchange and 'midway' in the Bypass.

The Stage III contract consists of the completion of the pavement and ancillary works together with some minor junction works for the total Bypass.

- (a) The Contract for the Stage I work was awarded to the D.M.R. and work commenced in September 1985. Some difficulty was experienced in obtaining sufficient suitable fill material from the proposed borrow area. This was eventually resolved by enlarging the cutting at the western end. Virtually 90 per cent of the works was completed by the end of the financial year. An amount of \$1.21 million was spent. The contract price is \$1.41 million.
- (b) The Stage II work was advertised in November 1985 and again D.M.R. won the contract which was let in February 1986. Due to the wet conditions encountered the work commencement was delayed and subsequently suspended. Hence not much work was achieved in the financial year. It is anticipated that work will resume early in 1986-87 and completed by March 1987. The Contract amount is \$0.96 million.
- (c) Stage III is anticipated to be advertised and let in the next financial year.



AT PROSPECT**Design**

A plan to enable local upgrading in the vicinity of Bertha Street has been prepared and will be sent to Westbury Council for comment.

PROSPECT BYPASS TO PATEENA ROAD, HADSPEN**Design**

Detailed design of a dual carriageway on a new alignment is proceeding for this 1.8 kilometre section preparatory to the preparation of contract documents. The existing highway will become a local road serving frontage development.

PATEENA ROAD TO WESTBURY**Planning**

An extensive planning investigation into a new alignment for the Bass Highway from the Prospect Bypass (Pateena Road) to Westbury is currently in progress. The proposed new route will involve major bridge structures across the South Esk and Liffey Rivers. The new highway will be to the south of the existing highway for the entire 22 kilometre length. It will replace previous proposals for upgrading the existing highway in sections from Hadspen to Carrick, and Carrick to Hagley and the previously proposed Carrick Bypass.

The concept of a new route has been discussed with the Westbury Council and the property implications have been discussed with most effected property owners. A public display of the options and preferred alignment will be staged in July 1986.

A preliminary Overview Report has been prepared and submitted to State Cabinet. A final submission to the Federal Government will be made following Cabinet approval and completion of the public participation exercise.

WESTBURY TO DELORAINE**Planning**

Following several fatal accidents near Exton in recent years, the priority for a bypass of Exton was lifted and a planning investigation undertaken to determine the most appropriate alignment for the highway between Westbury and the Deloraine Bypass.

Representations were received from several major land owners regarding the suitability of an alignment generally south of the existing Bass Highway as recommended in a previous Overview Report. A new investigation of the options available to upgrade this link is in progress.

Four possible routes have been identified and assessed in highway engineering terms and consultants were engaged to undertake an environmental investigation and public attitude survey. Potentially affected land owners have been consulted during the investigations. A draft report is expected to be forwarded to the Government within the next few months.

EAST TAMAR HIGHWAY**Design**

This highway is classified by the Commonwealth as a Developmental Road. Submissions have been made for the Commonwealth to alter this classification to National Highway. No response has been received.

In the absence of the reclassification the Department has prepared designs to meet deficiencies nominated by the D.O.T. This approach is expected to lead a constant sum of money (\$1 million approximately in 1984-85 terms) being spent on the highway for the next three or four years.

Two projects for design were put out to consultants viz:—

Bell Bay Main Road to Four Mile Creek, Widening—2.8 kilometres

North of Northern Rail Overpass for 1 kilometre, Reconstruction.

Plans for both these projects were received from the consultants in June 1986.

Four Mile Creek, Road Widening, associated with bridge widening.

“In House” design has just been completed and tenders are to be called during 1986–87.

Fourteen Mile Creek, Road Widening, associated with bridge widening.

Road widening will be carried out as part of the bridge widening contract.

Construction

Commonwealth approval to proceed with new projects was not received until May 1986 consequently construction was curtailed to completion of the minor projects commenced in 1984–85. \$0.332 million was expended during the financial year.

The total amount spent on reconstructing and improving this highway to 30 June 1986, was \$5.828 million.

NORTH-WEST DISTRICT

BASS HIGHWAY

DELORAINE BYPASS

Design

Land acquisition was substantially completed.

Design of earthworks and drainage for the first contract, Meander River Bridge, was carried out.

Design of the second contract, the Mole Creek Connector, from Mole Creek Main Road to the proposed interchange with the Bypass, and connection to Gleadow Street, was completed and the contract was advertised.

Design of the third contract, earthworks and drainage of the Bypass west of Meander River, proceeded.

A planning decision on the Exton Bypass east of the Meander River is required before road design east of the river can be completed.

MEANDER RIVER BRIDGE

Construction

Construction of this 5 span, 142 metre long bridge was commenced in August 1985. This Contract is being carried out by the Department.

At the end of the year, work on the structure was at an advanced stage.

Completion is expected in April 1987.

Expenditure in 1985–86 amounted to \$1.128 million and total expenditure to 30 June 1986 was \$1.44 million.

DON HILL TO ULVERSTONE BYPASS

Design

This project which has an overall cost approaching \$19 million is now nearly complete from a design viewpoint. The project will comprise five road and five bridge contracts.

The final drawings have been completed for one of the two remaining contracts (i.e. Turners Beach to Ulverstone) for roadworks and plans are nearing completion for the other, i.e. for the remaining roadwork contract between the Forth River and Turners Beach Overpass.

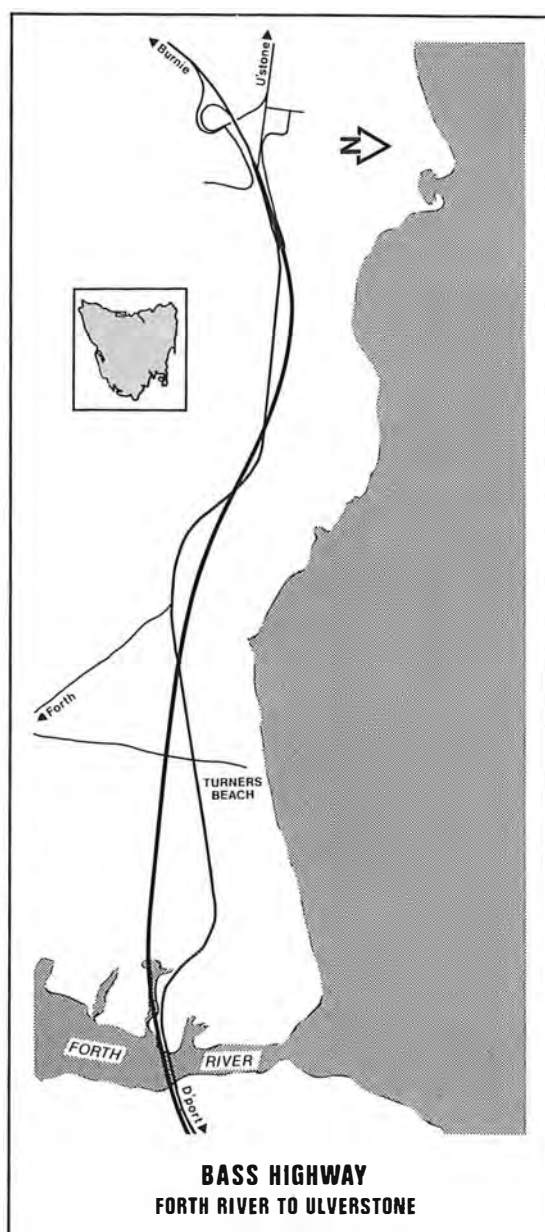
DON HILL TO FORTH RIVER

Construction

The overall length of the project is about 5.4 kilometres and is split up into a two stage contract. Stage I involves construction of 1.9 kilometres duplicated carriageway for westbound traffic. This work was completed and opened to traffic at the beginning of this financial year. D.M.R. was the contractor. Amount spent on the project to date is \$1.97 million. Stage II involves the construction of 3.5 kilometres of a new dual carriageway. D.M.R. again won the contract for the works. The contract amount is \$4.62 million.

Due to the inter-weaving of the new alignment with the existing highway construction has to be staged to cater for traffic. This has been achieved and traffic has already been transferred over to a completed section. Work commenced in August 1985 and it is anticipated the project will be complete by the end of next financial year. The amount spent in the financial year was \$3.726 million.

Total expenditure on this project to 30 June 1986, amounted to \$8.466 million.



FORTH RIVER TO ULVERSTONE BYPASS

Construction

This project is a continuation of the Don Hill to Forth River road improvement to Ulverstone. The overall length of this project is about 4.6 kilometres.

Roadworks

The roadworks will consist of three contracts:—

- (1) Service Roads which provide regulated access for residents on Clayton Rivulet Road area.
- (2) Stage I Roadworks which involve the construction of 2.9 kilometres of the new main carriageway from Ulverstone Bypass eastwards.
- (3) Stage II Roadworks which involve the construction of the remaining section of 1.7 kilometres to Forth River.

The Service Road contract was let towards the end of the financial year and again the D.M.R. was the successful tenderer at a contract price of \$667 896. Some preliminary works on earthworks and drainage were commenced but not much was achieved due to the wet conditions encountered. An amount of \$20 210 was expended. It is anticipated that the works will be completed by Christmas 1986.

It is proposed to advertise the Stage I Roadworks contract in 1986-87.

CLAYTONS RIVULET CULVERT

This triple cell culvert was completed by Capitol Construction Co. Pty Ltd on 24 January 1986, at a total cost of \$0.823 million.

TURNERS BEACH ROAD OVERPASS

Possession of site was given to the Department on 31 March 1986 for construction of this three span, 81.5 metre long bridge. The Contract amount is \$1 221 073.90.

Completion is expected in May 1987.

Expenditure on the total Forth River to Ulverstone Bypass project in 1985-86 amounted to \$1.359 million. Total expenditure to 30 June 1986, was \$1.978 million.

ULVERSTONE TO PENGUIN, STAGE I

Design

The Highway Planning Report submitted to the Federal Department of Transport was approved. The design duplication of the existing Bass Highway from the Municipal boundary of Ulverstone and Penguin to Ironcliffe Road overpass was let to engineering consultants. The design involves about 3 kilometres of carriageway duplication and interchange improvements at Dial Road/South Road. Reinforced concrete box culvert extensions for the three major crossings of Myrtle Creek are being designed by the Bridge Division.

PENGUIN TO HOWTH

Planning

Planning investigation to determine the most appropriate alignment for the future Bass Highway between Penguin and Howth, has been undertaken. Options included the previously favoured coastal route along the existing highway and two inland alignments each of which bypass Penguin, Preservation Bay and Sulphur Creek.

The 'Creamery Road Route' with an approximate length of 8 kilometres and an estimated cost of \$16 million was recommended to the Federal Department of Transport in an overview report. The Federal Department of Transport has given approval to the Overview Report for the scheme to proceed on the inland route alignment. The road design for this 8 kilometre section of dual carriageway will commence in 1986-87 following the detailed survey. The project, which incorporates two interchanges, includes five structures as well as three major reinforced concrete box culverts.

BURNIE EXPRESSWAY—STAGE B

This year saw the start of the last phase of this project which commenced at the North Terrace end in 1983–84. The project was split up into four sections plus the Wilmot Street overpass completed in 1984–85.

These are:—

(1) NORTH TERRACE

This section of about 0.7 kilometres, commencing from West Park Oval to Queen Street. D.M.R. won the contract at \$936 854 and the work was completed in 1984.

(2) VIEW ROAD TO HIGH STREET

This work was incorporated as part of the contract for the bridge construction. It involved a single span underpass at Jones Street and extensive reinforced earth walling. Work commenced in September 1984 and was completed during the financial year.

(3) HIGH STREET TO NORTH TERRACE

This 0.5 kilometre section was let to the D.M.R. on a tendered price of \$1.42 million. Work commenced early in the financial year and was completed by the end of the financial year. Although (1), (2) and (3) were completed, North Terrace is the only carriageway that can be utilised by traffic pending completion of the last phase of the works on Oakleigh Crossing to View Road.

(4) OAKLEIGH CROSSING TO VIEW ROAD**Design**

Design plans and contract documentation were completed for Contract No. 5, the section from Oakleigh Rail Crossing to View Road.

Construction

This 0.5 kilometre section was also awarded to the D.M.R. at a contract amount of \$4.5 million. The work included construction of retaining walls, junctions with existing roads and provisions of lighting, traffic signals and other traffic aids. Work commenced in March 1986 and was hampered by a minor slip during a road widening excavation. This has now been rectified. The westbound carriageway between Mount Street and North Terrace was opened to traffic on 30 June 1986.

Landscaping will be undertaken upon completion of the road and bridge construction projects.

Expenditure on Burnie Expressway Stage B in 1985–86 amounted to 3.399 million and the total cost to 30 June 1986 was \$11.865 million.



View Road to High Street—Reinforced earth walling at Jones Street Underpass



BURNIE - STAGE B

WEST PARK BURNIE TO WYNYARD**Planning**

A submission has been received from Burnie Council for the future extension of the National Highway from Burnie to Wynyard Airport. Data collection has commenced for a planning investigation into upgrading of this section of highway. A number of options have been identified at Cooeee. They include a bypass along the foreshore and the widening of the highway to accommodate four lanes with on street parking.

URBAN ARTERIAL ROADS**HOBART STATISTICAL DIVISION****ALGONA MAIN ROAD****Construction**

This year saw the completion of the 3.3 kilometre project and the road was opened to traffic in conjunction with the new road system which bypasses the Kingston business centre. Algona Main Road connects the Channel Highway near the Antarctic Division offices with Roslyn Avenue at Blackmans Bay.

For contract purposes, the road work was divided into two stages. Stage 1, comprising the main part of the work, length 2.82 kilometres, was completed in 1984-85. Stage 2 comprised two junctions with the Channel Highway Roslyn Avenue and Opal Avenue.

While Stage I contract works were undertaken by private contract, the D.M.R. won the second contract which included the junctions of Algona Main Road with Roslyn Avenue at Blackman's Bay end in the east and Channel Highway end in the west. Construction commenced in September 1985, and was completed in April 1986 in time for a combined opening with the Kingston Bypass. The contract amount was \$996 325. It is anticipated that landscaping works for the road will be undertaken in the next financial year.

Costs associated with this project in 1985-86 amounted to \$1.233 million. The total cost to 30 June 1986, was \$3.76 million.

HOBART SOUTHERN OUTLET ROAD

The current construction program consists of the continuation of the Outlet Road improvements after the completion of the Macquarie Street to Zomay Avenue duplication in the previous financial years. The present phase of the works is to construct a second carriageway from Zomay Avenue to Kingston and provide a bypass of the business area at Kingston. The work consists of:—

ZOMAY AVENUE TO OLINDA GROVE (Duplication and Interchange)**Construction***Olinda Grove Overpass*

This two span bridge was completed in November 1985 and opened to traffic on 13 May 1986, at a cost of \$0.560 million.

Roadworks

The construction of this 1.1 kilometre duplication with the concrete median barrier and the road complex at the interchange at Proctors Saddle have been completed in the financial year. It has been opened to traffic since May 1986, and the temporary traffic lights at the old junctions removed. This work was undertaken by D.M.R.'s day labour resources, and the asphalt surfacing was laid by private contract.

An amount of \$2.15 million was spent on this project in 1985-86. This brings the total cost to 30 June 1986 to \$4.159 million.

OLINDA GROVE TO KINGSTON**Planning**

Planning and preliminary design for the duplication of the Hobart Southern Outlet Road between Olinda Grove and Kingston interchanges, has been completed and detailed design plans have been issued for the first stage of construction to approximately 2.5 kilometres south of Olinda Grove.

Plans for the relocation of Proctors Road and connections to the new highway are also in preparation.

A brief for the engagement of a consultant landscape architect to restore and enhance the present landscape with the planting of Tasmanian natives in the vicinity of the new highway has been prepared, and submissions are expected shortly.

Construction

The overall length of this section is about 6.75 kilometres. The construction work is split into 3 stages. These are:—

- Stage I Olinda Grove to Proctors Road Underpass 1.7 kilometres
- Stage II Proctors Road Underpass to Shaw Road 1.86 kilometres
- Stage III Shaw Road to Kingston Interchange 3.2 kilometres.

PROCTORS ROAD UNDERPASS

Work started on this single span bridge towards the end of the financial year and an expenditure of \$0.016 million was recorded for 1985-86.

Roadworks

Worked commenced on Stage I (Olinda Grove to Proctors Road Underpass) section with extensive drainage and earthworks, which were virtually completed by the end of the financial year. Some preliminary drainage and earthworks have already been started on Stage II (Proctors Road Underpass to Shaw Road). This work is being undertaken by the Department's day labour resources. An amount of \$1.91 million was expended in the financial year.

KINGSTON BYPASS**Design**

Design of the loop connection as well as an exit ramp from the bypass to Huon Outlet is proceeding.

An investigation into providing an improved access to Firthside is being carried out.

KINGSTON INTERCHANGE UNDERPASS**Construction**

This three span bridge was completed on 27 February 1986, Construction work commenced in 1984-85 and the underpass was completed at a total cost of \$0.439 million.

Roadworks

This section of the Outlet project, 1.14 kilometres in length, bypasses the Kingston business centre. The D.M.R. won the contract to undertake this work which was completed and officially opened to traffic in April 1986, in conjunction with Algona Main Road and the Channel Highway Junction at Summerleas Road.

Expenditure on this project in 1985-86 amounted to \$1.444 million and total expenditure to 30 June 1986, was \$2.07 million.

BELLERIVE BYPASS

Design

Construction drawings for the Mornington Interchange and Cambridge Road Roundabout were completed. The complete service relocation and stormwater design was substantially completed at June 1986. In addition, all plans were completed between Mornington Road and Ninabah Street, Howrah. The final design from Ninabah Street to Rokeby Main Road including the Shoreline Drive Roundabout will continue in 1986-87.

MORNINGTON INTERCHANGE OVERPASS

Construction

This project includes the construction by direct labour of an overpass structure, the Kangaroo Bay Rivulet culvert and road approaches and ramps at the junction of the proposed Bellerive Bypass and the existing Eastern Outlet Road.

The overpass is a three span structure having a total length of 82.5 metres and overall width of 16.4 metres. Its superstructure consists of post-tensioned broad-flanged precast beams, the top flanges of which are joined with in-situ concrete to form the deck. A 1.4 metre wide walkway has been provided and aluminium guard fences will be used for the first time. The substructure consists of piled spill-through abutments and two columned piers founded on spread footings.

Construction commenced in November 1985 and completion is expected in February 1987.

Expenditure to 30 June 1986 amounted to \$0.506 million.

Roadworks

The construction of this major eastern shore project commenced this financial year. The overall length of this project is about 4.5 kilometres between the Eastern Outlet at Mornington and Shoreline Shopping Centre at Howrah. The first phase of the work is to complete the Mornington end of the project.

This work is being undertaken by the D.M.R.'s day labour resources. The work is split up into the ramps for the Eastern Outlet overpass, the roundabout complex at Mornington Road Junction and Mornington Road to Shoreline Drive. Work on the ramps commenced in September 1985. Some earthworks were also carried out on the Mornington Road-Shoreline Drive section to provide filling material for the ramps. Service alterations are being presently completed at the Roundabout. It is anticipated that the overpass, ramps, roundabout and the Flagstaff Gully Link Road will be opened to traffic by March 1987. An amount of \$2.089 million has been spent on the project this financial year.

EXTENSION TO LAUDERDALE

Planning

Planning for the Rokeby Bypass section of this future dual carriageway between Oceana Drive and the Police Academy is in progress. Following consultations with Clarence Council and Housing Department officers, an alignment which generally follows crown land or property set aside for future roadworks (Rokeby Connector) has been determined on this 5.5 kilometre section. Further planning work is required to determine the connections with the existing road network.

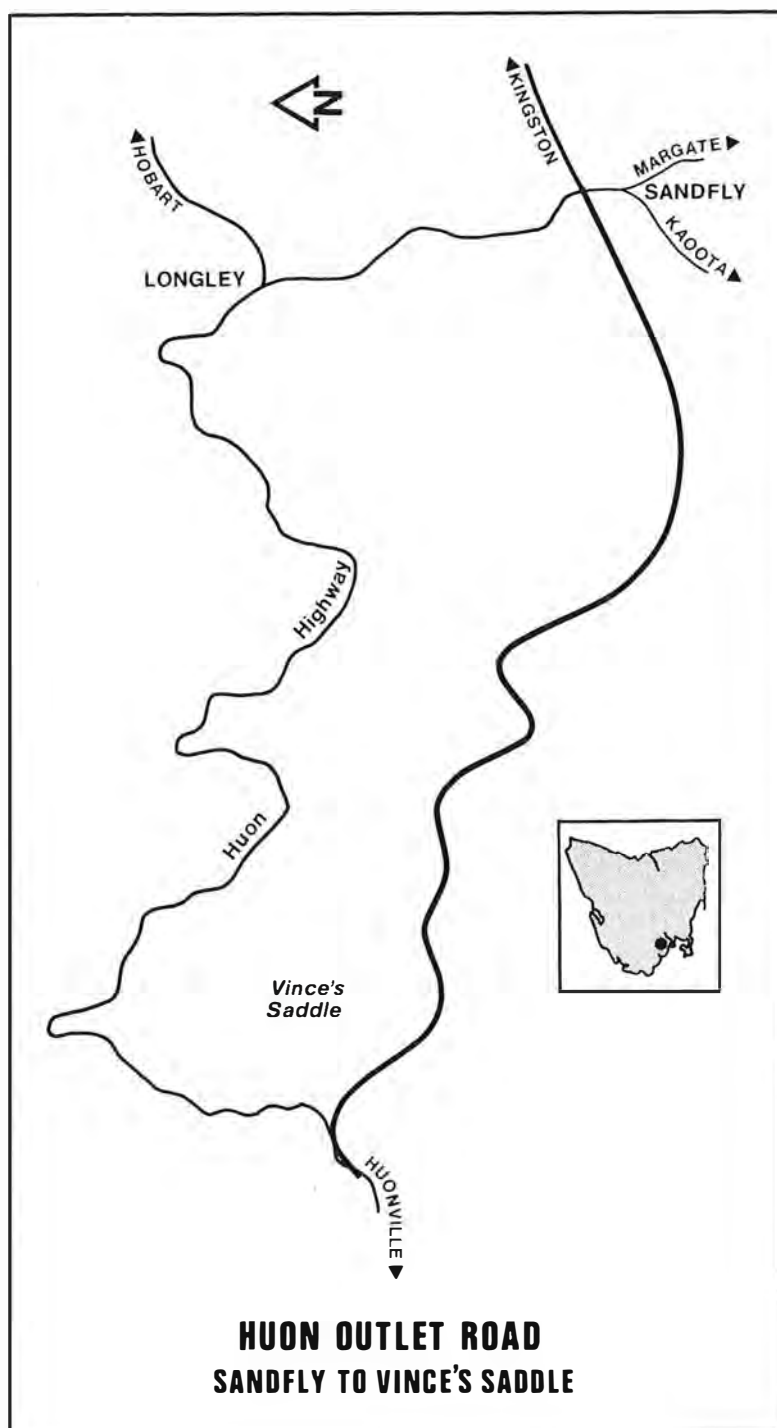
TASMAN HIGHWAY EXTENSION/DAVEY STREET EXTENSION

Planning

The planning phase of this project which will provide a direct link in the vicinity of the existing Slip Road between the Tasman Highway near Davies Avenue and the Davey Street/Maquarie Street one way couplet, has been completed.

A lengthy investigation as to the most satisfactory connections to the Domain in traffic and environmental terms was undertaken in consultation with the Hobart City Council, Lands Department and Transport Department Tasmania. The agreed scheme includes the following elements:—

- Extension of Davey Street from Park Street to Hunter Street.
- Reconstruction of Davey Street in the vicinity of the International Hotel.
- A six lane extension of the Tasman Highway across the old railway yards to Park Street, including an underpass at Davies Avenue.



- Extension of Campbell Street from Maquarie Street to Davey Street.
- Widening of Maquarie Street between Dunn Street and Evans Street.
- Reconstruction of Evans Street.
- Replacement of the Constitution Dock Bridge.
- Strengthening of the Victoria Dock Bridge.

Design

Stage I

Design has been completed, for construction by contract, of the Davey Street extension from Hunter Street to Park Street, including design of the Park Street/Maquarie Street/Davey Street signalised junction.

Other segments of the scheme surrounding the new International Hotel Hobart City are being designed and constructed by the Hobart City Council.

Stage II

This design extends from Stage I design in Park Street, through the old railway yards to connect with Tasman Highway near Davies Avenue.

It is a dual carriageway facility and has a signalised intersection with the present highway link from the Railway Roundabout. Design is to be completed in early 1986-87.

Stage III

Design has commenced on Stage III which includes the Davies Avenue underpass.

Construction.

In 1985-86 costs associated with this project amounted to \$0.413 million. These costs arose from the acquisition of properties, alterations to services, site investigations and the employment of consultants associated with landscaping and the design of the new Constitution Dock bridge.

The total expenditure on this project to 30 June 1986, is largely attributable to the acquisition of properties associated with this project and amounts to \$2.335 million.

HUON OUTLET ROAD—EXTENSION SANDFLY TO VINCES SADDLE

This 4.54 kilometres of road to the Huon was completed and officially opened to traffic in November 1985. An amount of \$1.134 million was spent in the financial year. This brings the total amount spent on the project since its commencement in 1983, to \$7.553 million. It is another project undertaken by the day labour resources of the D.M.R.

The New Jersey barrier units now installed in the medians between carriageways were constructed at the D.M.R. precasting yard at Lutana Quarry.

BROOKER HIGHWAY

DERWENT PARK ROAD ROUNDABOUT

Planning

A planning report has been prepared following an investigation into the most appropriate means to overcome traffic congestion and safety deficiencies at this roundabout. A three lane roundabout was compared with a full intersection under traffic signal control.

A cost benefit analysis was undertaken and the traffic signalised intersection recommended. A first stage involving alteration to major services and upgrading of the Derwent Park Road approach from the west to reduce delays on this approach to the roundabout has been recommended.

HOBART NORTHERN OUTLET ROAD**BERRIEDALE INTERCHANGE TO ABBOTSFIELD ROAD****Planning**

Options for provision of four lanes between Berriedale Interchange and Abbotsfield Road have been examined. Survey is currently in progress to enable design of a dual carriageway to Claremont Interchange, including alterations to ramps at Allunga Road, to proceed.

Design

Design will provide four lanes between the Berriedale and Abbotsfield Interchanges. Both design and construction are expected to proceed in stages with Stage 1 to include the roadworks between Berriedale and Claremont Interchanges. Survey is currently being undertaken.

CHANNEL HIGHWAY**SNUG TO O'BRIENS HILL****Design**

Design of this 2.62 kilometre section has been approved in principle and final design is currently in progress. The reconstruction is to be carried out under contract.

URBAN ARTERIAL ROADS**LAUNCESTON URBAN AREA****LAUNCESTON SOUTHERN OUTLET—URBAN SECTION****GLEN DHU CORRIDOR****Design**

The design of this 1 kilometre section of dual carriageway road has been completed and contract documents are being prepared. It will extend the Launceston Southern Outlet from the Glen Dhu Overpass and finish at the Bathurst Street-Wellington Street Junction. The work consists of the provision of a pedestrian overpass, relocation of services, residential streets and the extension of the dual carriageways.

A separate contract for the replacement of the brick barrel sewer under the corridor at Percy Street has been let.

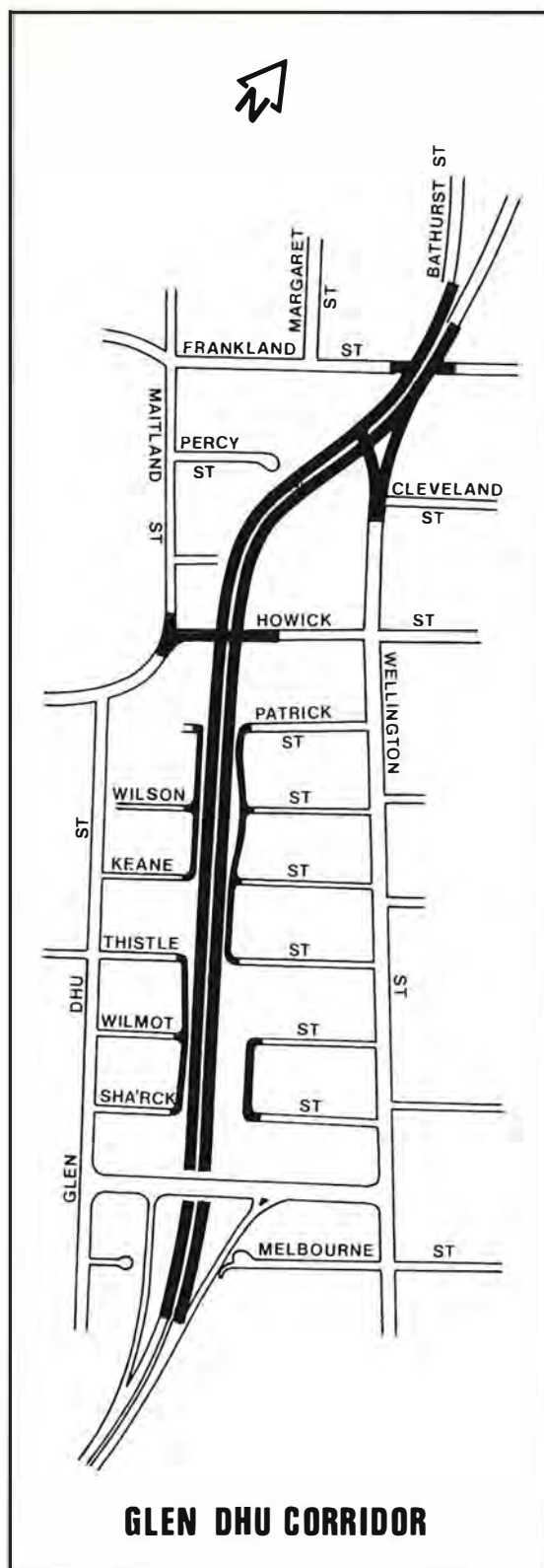
The footbridge near Thistle Street was also let as a separate contract.

THISTLE STREET FOOTBRIDGE**Construction**

Possession of site was given to the Department on 15 August 1985 and a practical completion certificate was issued on 3 April 1986.

This 6 span, steel/concrete composite bridge has an overall length of 124.5 metres with two of the spans crossing the proposed corridor at right angles and the remaining spans acting as ramps parallel to the corridor.

Expenditure in 1985-86 amounted to \$0.215 million and total expenditure to 30 June 1986, was \$0.226 million.



REPLACEMENT OF BRICK SEWER

A contract was awarded to the Department for the demolition of 38 metres of the existing brick barrel sewer and replacing of this section with new reinforced concrete pipes. Completion is expected at the end of July 1986.

Expenditure for the 1984-85 financial year amounted to \$0.047 million.

Road Construction*Contract No. 1 Service Road*

Work on the Service Roads (residential streets including service alterations) commenced during the 1984-85 year and continued into this financial year and has been completed. This particular work has been carried out in conjunction with the requirements of the Launceston City Council. The contract was awarded to Pearce Development at a contract amount of \$1.25 million.

Expenditure in 1985-86 amounted to \$0.803 million and the total expenditure to 30 June 1985 was \$1.203 million.

KINGS MEADOWS CONNECTOR**Design**

Early in 1986 the Department recommended a route for the Connector known as Intermediate Option A. The option was not acceptable to the Launceston Roads Committee and discussions with the Commonwealth Department of Transport, D.M.R. and the Launceston Roads Committee will continue on and endeavour to establish a commonly agreed route.

EAST TAMAR OUTLET**Design**

The 1986 Election Policy of the Government promised work on the extension of the East Tamar Outlet in the next term of Government. Agreement is being finalised with northern bodies on the alignment of the extension.

WEST TAMAR HIGHWAY**BARNES HILL, WIDENING****Design**

A design previously prepared for this project has been re-examined to find a more economical solution to the problems that exist. Two options are under consideration.

RURAL ARTERIAL ROADS**SOUTH-EAST DISTRICT****ARTHUR HIGHWAY****MURDUNNA TO HAWKS HILL****Design**

Design plans for the curve improvement near Hawks Hill have been issued.

Construction

The reconstruction of the Arthur Highway on this particular 6.4 kilometres began in 1984-85 and work continued during the financial year. This is a day labour project.

The 3.8 kilometres completed to primer seal in 1984-85 have now been sealed. Work on the remainder of the section (Forestry Deviation) to Hawkes Hill continued in 1985-86. The drainage and earthworks have virtually been completed. Due to the wet conditions only 60 per cent of the pavement was completed. The outstanding work will be completed in 1986-87.

Expenditure on this section of road in 1985-86 amounted to \$0.52 million and the total cost to 30 June 1986 was \$1.36 million.

HAWKES HILL TO EAGLEHAWK NECK**Design**

Examination of the Coach Road corridor option showed this to be superior to reconstruction along the existing road. Following preliminary design work the corridor has now been cleared of the dense scrub for final survey and design.

EAGLEHAWK NECK TO TARANNA**Design**

Based on the recommendation of the Consultant's Planning Report it has been decided to upgrade the existing highway for some 5 kilometres with some minor deviations as required. Construction plans for the length from The Neck to Mason Point are virtually complete. The section from Mason Point to Taranna has yet to be designed.

CHANNEL HIGHWAY**CYGNET TO HUONVILLE****Design**

A tentative centre-line is currently being examined to be surveyed for design purposes over this 16.2 kilometre section of the Channel Highway.

HUON HIGHWAY**VINCES SADDLE TO GROVE****Design**

All plans for this section of road were completed and issued.

Construction

Construction work to complete this section to link up with the new Huon Outlet continued in the financial year.

The section between Dip Road and Grove has now been completed except for the junction at Grove. On the remainder of the section between Dip Road and Vincés Saddle, difficulties have been encountered due to rock excavation and alteration to services. Drainage and earthworks are virtually complete. The remainder will be completed in 1986-87.

Total amount spent to date for the 5.05 kilometres is \$3.7 million while expenditure in 1985-86 amounted to \$1.94 million.

GROVE TO HUONVILLE**Design**

Except for some minor changes to junction design details, construction plans are virtually complete.

Construction

Some preliminary work was undertaken in 1985-86 which involved alteration to services and consultants fees. Expenditure amounted to \$0.027 million which increased the total spent on this project to 30 June 1986 to \$0.101 million.

GEEVESTON TO HUONVILLE**Design**

The only remaining lengths to be reconstructed are:—

- (a) *Through Geeveston*—Design is nearing completion.
- (b) *Through Franklin*—A preliminary design is underway.

A public display showing the Department's proposal will be necessary before construction commences.

LAKE HIGHWAY**MIENA TO MARLBOROUGH HIGHWAY****Construction**

This project was commenced in 1984-85 and a 4 kilometre section was completed and sealed in this year. The remaining 2.5 kilometre section was constructed and sealed this financial year. This 6.5 kilometre project has now been completed. An amount of \$0.553 million was spent this financial year. In all the project has cost \$1.412 million. This completes the current upgrading program for the Lake Highway in this area.

LYELL HIGHWAY**NEW NORFOLK TO FENTON MAIN ROAD JUNCTION**

The reconstruction of the 17 kilometre section between New Norfolk Fenton Main Road began in 1977-78 with a curve improvements at Plenty, and climbing lane at Rosegarland in 1978-79. Work began from the New Norfolk end in 1979-80 and continued on until this financial (1985-86) which saw the completion of the last 2.1 kilometre section (Belmont Deviation to Rosegarland) of the New Norfolk—Fenton Main Road project. This year's expenditure was \$0.910 million. This brings the total expenditure on this project since 1977-78 to \$7.463 million the average cost of road construction being \$403 000 per kilometre.

FENTON MAIN ROAD TO GRETNA**Design**

Survey has been received and plotted. Detail design is to proceed in two stages viz., Fenton Main Road to Gretna and through Gretna.

GRETNA TO MARKED TREE ROAD**Construction**

Work commenced this financial year on the 1.8 kilometre section between Marked Tree Road Junction and Gretna. Preliminaries, drainage and earthworks were virtually completed on this section. The completed foundation has been paved with sub-base material. It is anticipated that the section will be completed in 1986-87, and work on the remaining section to Fenton Main Road junction will also commence in that year. The amount spent in 1985-86 amounted to \$0.672 million.

LACHLAN RIVER BRIDGE TO DERWENT RIVER BRIDGE**Design**

Preliminary investigations to determine the options for upgrading this section of the Highway are being carried out in consultation with the New Norfolk Council.

TASMAN HIGHWAY (SOUTH-EAST)**FINGERPOST ROAD TO BLACK CHARLIES OPENING****Construction***Orielton Rivulet Culvert*

The twin cell insitu concrete box culvert was started and completed during the year at a cost of \$0.107 million.

Burnside Culvert

This single cell precast box culvert was started and completed during the year at a cost of \$0.047 million.

Roadworks

Construction of this 4.38 kilometre section of the highway between the Fingerpost Road junction and the bottom of Black Charlies Opening was commenced in late 1984-85. The main feature of the work is the construction of the road on a new alignment over almost the entire length of the project. Hence the disruption to traffic over the existing narrow, winding section is negligible. This year's construction was concentrated on the deviation where some heavy earthworks and drainage were carried out. The deviation has now been completed to sub-base level. The amount expended was \$1.313 million which brings the total to 30 June 1986 to \$1.57 million. The estimated cost for the project is \$2.6 million. Subject to funding allocation it is anticipated that the remainder of the works will be completed in 1986-87.

BLACK CHARLIES OPENING TO RUNNYMEDE

Design

Design for this 1.9 kilometre section was completed.

BRUNY MAIN ROAD

Design

Detailed design on the section Lennon Main Road to Adventure Bay Road has continued with plans for construction being supplied as required.

Construction

Prior to 1983-84, reconstruction and sealing of the Bruny Main Road was carried out by the Bruny Council acting as agent for the D.M.R. The work commenced at Alonnah and extended to the Adventure Bay turn-off. Expenditure on this section amounted to \$0.77 million.

In accordance with the Government's road policy, since 1983-84 the D.M.R. works program has provided an increased allocation to enable reconstruction to be accelerated. The increase in magnitude of the work led to the need for it to be undertaken by the Department's day labour forces, with some utilisation being made of Bruny Council plant. The construction program was arranged so that two year's financial programs could be executed in one visit to the island by a D.M.R. crew.

An arrangement exists whereby the Bruny Council maintains the gravel section of the road, including those parts which have been prepared but not sealed.

Work has been concentrated on the 21.4 kilometre section between the Lennon Main Road and Adventure Bay turn-offs, with activity generally being northward from the Adventure Bay turn-off.

The current status of the construction program is as follows, commencing from the Adventure Bay Turn-off:—

1. 2.5 kilometres has been completed and sealed in 1985-86.
2. The next 3 kilometres known as the 'neck' section has been left out to concentrate on the worse section beyond.
3. Earthworks drainage were completed for a further 2.6 kilometres beyond the 'neck' in 1985-86. This section has now been completed to sub-base level.

Based on the 'back to back' financial arrangement to maximise the resources it is proposed to retain the D.M.R. crew to continue the construction in 1986-87. The amount spent in 1985-86 was \$0.487 million.

The total expenditure on this section of road to 30 June 1986, was \$1.44 million.

FENTON MAIN ROAD

WESTERWAY BYPASS

Planning

A planning report was prepared to determine the feasibility of a bypass of Westerway as the alternative to upgrading the existing town route. A number of alignments, rail crossings and access locations were considered.

NORTH-EAST DISTRICT**TASMAN HIGHWAY****LAUNCESTON TO SCOTTSDALE**

The length of classified road between Waverley and Scottsdale (Bridport Main Road turn-off) is 59.69 kilometres. The road was sealed to a width of 4.9 metres in 1940-41 and was generally maintained to the dimensions of that construction until 1982-83 when curve improvements to the value of \$0.670 million were undertaken by the then St Leonards Council in Waverley with considerable financial assistance from the D.M.R. Other sections follow:—

WAVERLEY TO NUNAMARA**Design**

Design of the final 1.5 kilometres was completed.

Construction

Reconstruction of this section of the highway commenced in 1982-83 and was completed in 1985-86. The work was carried out by the D.M.R.'s day labour force.

Expenditure in 1985-86 amounted to \$0.535 million and the total cost to 30 June 1986 was \$3.65 million.

SCOTTSDALE TO SCAMANDER**RINGAROOMA TURN-OFF TO BRANXHOLM****Design**

Design is being undertaken for reconstruction of this section (4km).

Within this section is Legerwood Creek Bridge. A new bridge now being designed will also pass over the railway, eliminating a level crossing.

BRANXHOLM TO DERBY**Construction**

Reconstruction of this 6 kilometre section between the eastern side of Branxholm and Derby commenced in March 1985.

Work on the road improvement continued in the financial year. Some sealing was accomplished between chainage 1 000 and Derby Backroad. Pavement construction up to chainage 6 840 is in varying levels of completion and was disrupted by the wet conditions experienced.

It is anticipated that the project will be completed in 1986-87 subject to funding availability.

Expenditure in 1985-86 amounted to \$1.312 million while the total cost to 30 June 1986 was \$2.081 million.

YARMOUTH CREEK BRIDGE

This two span 20.6 metre long bridge was completed on 14 November 1985, with \$0.117 million being spent during 1985-86. The total cost of this bridge was \$0.237 million.

NORTH GEORGE RIVER BRIDGE

Construction has commenced on this two span, 38 metre long bridge and its completion is expected in December 1986. Expenditure in 1985-86 amounted to \$0.155 million.

AT ST HELENS**Planning**

A planning investigation was undertaken to determine the feasibility and need for an alternative alignment to the Tasman Highway at St Helens between Parkside and the Golden Fleece Bridge. Following site inspection and discussions with Council it was determined that all future planning should concentrate on improvements to the existing foreshore route. Traffic counts have been taken and survey is in progress which will enable preliminary design to proceed.

SCAMANDER TO SWANSEA

A major upgrading program on the Tasman Highway between Swansea and Scamander has been in progress over the past nine years. Major sections of work completed in this period include:—

- Rehabilitation, Coles Bay turn-off to Bicheno
- Rehabilitation and Reconstruction, Bicheno to Chain of Lagoons
- Rehabilitation, Falmouth turn-off to Scamander.

In addition to these works widening and asphalt overlays have been completed on the steep section of Elephant Pass and on curve improvements on St Marys Pass.

The proposed deviation of the Tasman Highway between Falmouth Turn-off and Chain of Lagoons was approved by the Parliamentary Standing Committee for Public Works in 1984-85 and construction commenced in 1984-85 and continued in 1985-86.

The condition of the Tasman Highway between Swansea and Coles Bay Turn-off is considered to be satisfactory and when the Falmouth-Chain of Lagoons Deviation is completed, the Tasman Highway between Triabunna and Scamander should be satisfactory for current traffic usage.

Details of individual projects on this section follow:—

SCAMANDER RIVER BRIDGE

Design

The existing Scamander River Bridge is a single lane steel and concrete structure which has a load limit of 25 tonnes. Design of a replacement structure downstream of the existing bridge is in progress.

FALMOUTH TO CHAIN OF LAGOONS LINK ROAD

Planning

Planning work was completed to achieve control of access on this route, involving liaison with the Fingal Council.

Design

Design continued at a rate dictated by the construction program.

Minor design changes to assist construction and to conform to environmental demands were carried out.

Construction

Bridgeworks

OLD BILLY CREEK CULVERT

Work on this twin cell insitu reinforced concrete culvert was completed on the 1 November 1985.

BANTICKS CREEK CULVERT

This Armco multi plate piped culvert was started and completed during the year.

FOUR MILE CREEK CULVERT

Work on this triple cell insitu reinforced concrete culvert was completed on 23 January 1986.

LUMERA CREEK CULVERT

Work on this twin cell insitu reinforced concrete culvert was completed on 4 April 1986.

Roadworks

Construction work on this important link road commenced in January 1985, and is being carried out by the D.M.R.'s day labour force. The nature of the work involved lends itself to the extensive employment of heavy machinery. The rate of progress is subject to the amount of funding provided each financial year.

Work on the 15.5 kilometre section between Four Mile Creek and Chain of Lagoons was commenced first. A substantial earthworks and drainage program was accomplished over the 6 kilometre section between Four Mile Creek and Old Billy Creek in 1984-85. This financial year the works have been concentrated on completing the drainage and earthworks on the above section. This included the deviation behind Four Mile Creek township and the additional excavation to flatten the batter from 1½:1 to 2:1 over a section of the cuttings. The formation over the 6 kilometre section has now been completed.

An amount of \$1.749 million was expended in the 1985-86 financial year. This brings the total cost of this project to 30 June 1986 to \$3.497 million.

WEST TAMAR HIGHWAY

CORMISTON CREEK TO MUDDY CREEK

Design

Following the decision not to bypass Legana, the design of the whole of this section, which includes new bridges at Cormiston Creek and Muddy Creek as well as the upgrading of several junctions, is now complete.

Roadworks Construction

Reconstruction of this section of the West Tamar Highway continued in 1985-86 with installation of wick drains for the carriageway over the mud flats between Cormiston Creek and Legana being completed. Surcharge embankment was placed over the area to assist in the rapid settlement for the future roadworks. Some preliminary drainage and earthworks were also carried out between Bridgenorth Road and Muddy Creek. The extent of the work was restricted by the amount of funding available. An amount of \$0.512 million was spent in the financial year. This brings the total expenditure, since 1983 to \$2.712 million.

MUDDY CREEK CULVERT

Construction of this twin cell insitu concrete box culvert commenced during the year with \$0.060 million being spent.

MUDDY CREEK TO LANENA

Design

Following representations from the Beaconsfield Council, a deviation in the vicinity of Bradys Lookout was considered and rejected due to the cost as well as problems associated with an active landslip. As an interim measure, the southbound climbing lane was extended another 500 metres. Design of the 1 kilometre extension of the northbound climbing lane to Brady's Lookout and the relocation of the car park is proceeding.

BLESSINGTON MAIN ROAD

Design

An investigation of the Blessington Main Road between St Leonards and White Hills has been carried out to identify geometric deficiencies requiring survey and design. Drawings will be prepared during 1986-87 to correct sub-standard elements as part of a program of pavement strengthening.

BRIDPORT MAIN ROAD

CEMETERY AND McBEANS HILLS

Construction

The Department provided funds in 1984-85 to commence the removal of the worst of the vertical crests and reconstruct the road in the vicinity of McBeans and Cemetery Hills as road safety improvements. This work was completed in 1985-86.

These improvements were situated on the section of the Bridport Main Road between Listers Lane and Burnside Road on the outskirts of Scottsdale.

Expenditure in 1985-86 amounted to \$0.466 million. The total cost to 30 June 1986 was \$0.751 million.



DON HILL TO FORTH RIVER



SCAMANDER RIVER BRIDGE



FOUR MILE CREEK BYPASS



UNDERWOOD DEVIATION

GLADSTONE MAIN ROAD

Bridge Construction

David River Bridge was completed during the financial year at a total cost of \$0.065 million.

LAKE LEAKE MAIN ROAD

Design

The final 3 kilometres of design was completed, the last section being at 'Ladies Mile'.

Construction

HORTONS CREEK CULVERT

This triple cell insitu culvert was completed during the year.

Roadworks

The reconstruction and upgrading of this 58 kilometre main road between the Midlands Highway at Campbell Town and the Tasman Highway was commenced in 1975, and is in various stages of completion. Since 1982 additional funds have been allocated to this project and this has enabled the reconstruction to be greatly expedited. To date about 41.25 kilometres have been sealed since 1975 and almost 17 kilometres remain to be completed.

In 1985-86 the Campbell Town and Glamorgan Councils continued the upgrading of the western and eastern ends respectively from the funding allocated by the D.M.R.

Work continued in 1985-86 by the D.M.R. day labour force on its section and a further 8 kilometres has been completed to sub-base level. However, the wet conditions encountered during the critical period prevented the completion of the pavement works. Traffic has been diverted onto the Stonehouse Creek deviation—'Ladies Mile'. This is completed to sub-base level.

It is anticipated all outstanding works in the D.M.R. section will be completed and sealed in 1986-87.

Expenditure in 1985-86 was \$1.412 million including Councils. This brings the total expenditure to 30 June 1986 to \$7.144 million.

LILYDALE MAIN ROAD

UNDERWOOD DEVIATION

Construction

The D.M.R. was the successful tenderer for this project. Work commenced in November 1985, but due to the wet conditions the initial progress was slow. Some additional drainage had to be installed in the excavation through Forestry Reserve. The project is due for completion in 1986-87. The contract amount is \$1.7 million for roadworks on this 3.9 kilometre section.

Total expenditure on the Underwood Deviation to 30 June 1986, was \$1.605 million. Expenditure in 1985-86 amounted to \$0.83 million.

UNDERWOOD DEVIATION TO LILYDALE

Design

Completion of this design is being undertaken (4 kilometres). This section will complete the reconstruction of Lilydale Main Road being undertaken under the Australian Bicentennial Road Development Program.

The total expenditure on reconstructing and improving the Lilydale Main Road from 1982-83 to 30 June 1986, was \$3.358 million.

NORTH-WEST DISTRICT

BASS HIGHWAY

WYNYARD BYPASS INTERSECTION WITH MT HICKS SECONDARY ROAD

As the channelisation and signing measures have not been enough to prevent the accidents at this intersection, a roundabout was designed, using the MOSS system, and construction is substantially completed. The slowing down of traffic from all directions is evident, and should achieve the desired result.

WILTSHIRE JUNCTION TO SMITHTON

Design

Design of the improvement from Black River to just east of Irishtown Main Road was completed, and final plans were issued to near the log loading siding of the railway at Wiltshire. The remainder to Black River was deferred.

Construction

About 11 kilometres of this 18 kilometre section between Irishtown Main Road and Black River Bridge have already been completed.

This year the work was concentrated on the 6.4 kilometres section between Stanley Highway Junction and Wiltshire Junction. The provision of 'white' shoulder seal to the section between Irish Town Main Road and Stanley Highway was also completed during the year.

The section between Stanley Junction and Wiltshire Junction is virtually on a new alignment. This has been constructed up to base level but not sealed. Traffic has been diverted onto the section.

Expenditure in 1985-86 was \$1.5 million which brings the total to 30 June 1986 to \$4.1 million.

SMITHTON BYPASS AND EASTERN APPROACHES

Design

The route of the bypass was finally located, survey was carried out and design proceeded, commencing from the end of the previous improvement east of Irishtown Main Road.

Circular Head Council approved the proposed design including the junctions, and agreement was reached with landowners. The proposed roundabout at the western end requires further investigation.

LAKE HIGHWAY

GOLDEN VALLEY TURN OFF TO BREONA

Construction

Work continued on the upgrading of this section of road during the financial year. The activity in the area was wound down after the completion of sealing, in December 1985, to the junction of the road to Liffey Falls. This brings the total length of road completed from Golden Valley Junction to 7.6 kilometres. Work will resume in 1986-87.

Expenditure in 1985-86 was \$0.831 million which brings the total to 30 June 1986, to \$1.628 million.

DEVONPORT MAIN ROAD

(a) NORTH OF HORSEHEAD CREEK

Design plans have been issued and construction commenced on the realignment of the Devonport Main Road for about 1 kilometre to the north of Horsehead Creek.

(b) TURNERS LANE TO MERSEY MAIN ROAD

Design

Devonport Council Plans have been approved and construction commenced by Council for the reconstruction of this section of the Devonport Main Road. Work includes the provision of additional drainage facilities, kerb and gutter and new pavement. The D.M.R. is contributing \$0.050 million to the project.

PINE MAIN ROAD

Design

Following representation from the Penguin Council it was decided to upgrade a short but very sub-standard section of the road just before West Pine Road Junction. Design of this section has been completed. Construction commenced in March 1986.

SHEFFIELD MAIN ROAD

Design

The design of a 2.3 kilometre section from Redwater Creek at Railton towards Sheffield was completed by Consulting Engineers.

Design of the next Stage (2 kilometres) is also to be undertaken by the same firm of consultants.

Construction

In 1985-86 the Devonport Council continued the planned upgrading of the Sheffield Main Road at Spreyton.

The D.M.R. day labour force completed Stage 2 of the curve improvements on the section between Railton and Sheffield. Reconstruction was also commenced on the section through Railton and will be extended to 3 kilometres South of Railton.

Expenditure on this main road in 1985-86 amounted to \$0.097 million and the total cost to 30 June 1986, was \$0.334 million.

REEVE STREET CONNECTOR (BURNIE)

Planning

Planning for the future Reeve Street Connector between Marine Terrace and upper Mount Street is proceeding when resources are available. The main purpose of this proposed link is to relieve traffic congestion in Mount Street, following the completion of roadworks between Guildford and Hampshire, and the resultant increase in traffic using this route to and from the West Coast. An origin/destination survey to determine projected usage of such a facility is required and will be undertaken in 1986-87. The chosen route utilised the corridor set aside along Alexanders Creek and provides for four lanes in the ultimate.

Difficulties which have been encountered in the planning phase to date included extensive longitudinal culverting of the creek, potential land slip, steep grades, grade separation of two rail crossings, maintenance of access to A.P.P.M. and other roads servicing the area.

ACCESS TO LAKE BARRINGTON

Planning

The traffic implications of the projected visitor levels for the proposed 1990 World Rowing Championships at Lake Barrington were examined and recommendations made on the associated upgrading of Sheffield Main Road, Railton Main Road, the road into Lake Barrington State Recreation area and some local roads.

WEST COAST LINK ROADS

GUILDFORD TO HAMPSHIRE LINK ROAD

The new Guildford-Hampshire Road will be located east of the existing Murchison Highway and will bypass the Hellyer Gorge section of that Highway. The new route is approximately 27.5 kilometres long and will link the Fingerpost on the Murchison Highway with Hampshire. The new route from Burnie to the Fingerpost via Ridgely and Hampshire is 10.5 kilometres shorter than the existing road via Somerset and the Hellyer Gorge.

Design

In 1985-86 design was completed for the final 11.5 kilometres.

HELLYER RIVER BRIDGE**Construction**

This bridge consists of two spans of steel girders acting compositely with a reinforced concrete deck, and supported by a substructure consisting of reinforced concrete abutments founded on steel piles and a single column pier on a spread footing. Its overall length and width are 66 metres and 9.2 metres respectively.

Siteworks commenced in March 1985, and construction continued throughout the financial year with the steel girders being erected in January and May 1986. Completion of this structure is expected in November 1986.

Expenditure in 1985-86 amounted to \$0.639 million and the total cost to 30 June 1986 was \$0.851 million.

WEY RIVER BRIDGE

Construction of this twin cell insitu concrete culvert commenced in April 1986 and its completion is expected in January 1987. Expenditure in 1985-86 amounted to \$0.093 million.

Road Construction

The construction of this link road continued during the financial year and 17 kilometres of the road have now been cleared. Earthworks and drainage are being undertaken over different sections. At the Hampshire end about 4 kilometres have been formed and paved. Earthworks and drainage are progressing north from Goodwood siding towards Guildford Road. A distance of about 9 kilometres. Earthworks and drainage for 5 kilometres south of Guildford Road are virtually completed.

Expenditure on the total project in 1985-86 amounted to \$3.034 million and costs to 30 June 1986, totalled \$4.593 million.

QUE RIVER TO LEARYS CORNER LINK ROAD

The new tourist road to be constructed between the Murchison Highway near the Que River and Learys Corner on the Cradle Mountain Tourist Road was designed by Consultants for the D.M.R. following the Gordon below Franklin Dam decision when it was anticipated that alternate works would be required for the H.E.C.'s workforce. The decision to proceed with the Henty-Anthony and King River power schemes overcame this foreseen need and the road was not proceeded with at that stage.

The road is located close to the new H.E.C. transmission line across the Myaday Plains and the Vale of Belvoire. A lower standard section of road with grades of 1 in 8 will be necessary to cross the Black Bluff Range. The project is 27 kilometres long.

The Murchison Highway to Cradle Mountain Tourist Link Road will provide a link between Devonport and the West Coast either via the Wilmot Main Road and Cradle Mountain Tourist Road or via the Sheffield Main Road, Claude Road, Cethana Tourist Road and Cradle Mountain Tourist Road. These new routes are about 41 kilometres shorter than the existing route via the Bass and Murchison Highways.

Construction

Work on the construction of the link road continued during the financial year. Earthworks and drainage from Learys Corner (Chainage 26 600) to the Vale River (Chainage 15 000) are virtually completed. The completed formation in this section has been partly paved. From the Vale River over Black Bluff Range to Cattley South Road (Chainage 12 920) earthworks and drainage are progressing west. Some heavy excavation was undertaken. Clearing from Cattley South Road to the Murchison Highway is virtually completed. Stripping and some formation works have also been done over the different sections of the cleared area.

Expenditure in 1985-86 amounted to \$2.702 million and the total expenditure to 30 June 1986 was \$4.952 million.

SMITHTON TO ZEEHAN CORRIDOR

The link road will provide an alternative route for tourists and tour operators from the North-West to Zeehan and Strahan, which will pass through the far North-West Regions of the State. Opportunities will exist for promotion of tourist facilities at Arthur River, Balfour and Corinna and expansion of the scenic launch excursions from Arthur River and Corinna.

The project will link the Blackwater Road with the new H.E.C. constructed Heemskirk Road north of Zeehan on the West Coast.

The route that has been adopted is from Marrawah to Heemskirk Road by way of Arthur River, Couta Rocks, Rebecca Road, Balfour, a new line to Corinna and a new line to Heemskirk Road. The total length is approximately 120 kilometres and much of this is through virgin country.

Existing roads that will form part of the route and will require improvement are the Arthur River Road, Temma Track to Couta Rocks, the Forestry Commission's Rebecca Road and part of Blackwater Road, and a small part of the Corinna Developmental Road.

A major bridge will be required at the Pieman River, and small bridges at the Lindsay, Donaldson and Savage Rivers.

MARRAWAH TO HEEMSKIRK ROAD

Design

Detail design has been completed on the sections Couta Rocks to Rebecca Road (8.25 kilometres) and Blackwater Road to Balfour (9 kilometres).

Detail design investigation is continuing south of Balfour towards Lindsay River (10 kilometres) and, at Corinna, for the location of the Pieman River Bridge.

Construction

Construction work on the corridor commenced during the financial year. Work facilities and a camp site were established near the junction of Balfour Road and Blackwater Road, to serve the construction gangs engaged in the construction of the Blackwater-Balfour and Rebecca Road-Couta Rocks sections of the project.

BLACKWATER ROAD-BALFOUR (9 KILOMETRES)

Construction of this section commenced from the Blackwater Road end on a separate alignment from the Balfour track. Clearing, earthworks and drainage for the first 3 kilometres are virtually completed. The progress of the works will depend on the funding availability.

REBECCA ROAD TO COUTA ROCKS (8.2 KILOMETRES)

Work commenced from the Rebecca Road end. The first 3 kilometres involved very extensive clearing of the forest reserve, and the provision of road access on the design alignment. An excellent standard of workmanship was achieved and is a credit to the construction gang. The rest of the clearing towards Rebecca Road was through peat and button grass plains. A further 4 kilometres had been cleared and stripped.

The majority of the earthworks and drainage for the first 3 kilometres has been completed.

Expenditure on this project in 1985-86 amounted to \$1.510 million. Total expenditure to 30 June 1986, was \$1.728 million.

UNCLASSIFIED ARTERIAL ROADS

(Council Controlled Roads)

SOUTH-EAST DISTRICT

HOBART CITY COUNCIL

BURNETT STREET WIDENING

This work is to be undertaken on a dollar for dollar basis between the D.M.R. and the Hobart City Council. It involves the widening and reconstruction, by the Hobart City Council, of Burnett Street between Argyle and Murray Streets to six lanes with a narrow median. The project includes alterations to intersections with Argyle Street and Elizabeth Street and reconstruction of the Arthur Street/Murray Street/Burnett Street intersection.

The project forms part of the Derwent Region Transportation Study program and construction work commenced late in the financial year.

No compensatory payments had been claimed by the Hobart City Council to 30 June 1986.

MUNICIPALITY OF NEW NORFOLK**GLENORA ROAD**

Since 1978-79 the D.M.R. has provided grants to the New Norfolk Council to assist in the upgrading of the Glenora Road which is a Council responsibility.

A grant of \$0.050 million was made in 1985-86. This grant brought the total assistance for this road since 1978-79 to \$0.511 million.

NORTH-EAST DISTRICT**LAUNCESTON CITY COUNCIL****Road No. 3 Royal Park Interchange**

The State Government decided to fund this road link in 1983. The purpose of the road is to provide access to and from the major parking areas in this section of Launceston via Cimitiere Street to the Bathurst Street/Wellington Street Couplet.

The Launceston City Council was paid to supervise the construction work which commenced in 1984-85.

The work was undertaken by a private contractor and has been completed. Expenditure to 30 June 1986 amounted to \$0.515 million including property acquisition costs.

LOCAL ROAD PROJECTS**Classified Local Road Construction****SOUTH-EAST DISTRICT****TUNNACK MAIN ROAD****At OATLANDS****Construction**

The deviation of the Tunnack Main Road in Oatlands, made necessary by the opening of the Oatlands Bypass on the National Highway, was commenced in 1984-85 and completed in 1985-86.

Expenditure in 1985-86 amounted to \$0.134 million and total expenditure to 30 June 1986 was \$0.349 million.

LACHLAN SECONDARY ROAD**Construction****RINGWOOD CREEK CULVERT**

This single cell precast box culvert was started and completed during the year at a cost of \$0.052 million.

NORTH-EAST DISTRICT**COLES BAY TOURIST ROAD****Design**

A further 5 kilometre section of design was completed in 1985-86.

Construction

Due to a reduction in funding allocation this financial year the activity was wound down by March 1986. However, a further 4 kilometres of the road was sealed. This brings the total length completed to 12 kilometres. A further 3 kilometres of earthworks were also completed during the year.

The expenditure in 1985-86 was \$0.747 million which brings the total expenditure since 1982 to \$2.187 million.

NORTH-WEST DISTRICT**CRADLE MOUNTAIN TOURIST ROAD**

Design investigation was undertaken between Pencil Pine Lodge and Waldheim, i.e. within the Cradle Mountain National Park. Surveys have been arranged for reconstruction design to be undertaken. Liaison is being undertaken with the National Parks and Wildlife Service.

CETHANA TURN OFF—LEARYS CORNER**Construction**

Weaning Paddock Creek Culvert was completed at a cost of \$0.040 million.

Roadworks

Work on the upgrading of the 13 kilometres of road from Lehmans Creek to Learys corner by day labour resources continued during the year. The work achieved during the year included 2.4 kilometres of sealing and 3.4 kilometres of reconstruction completed to lower sub-base level, plus some minor earthworks to accommodate drainage works at Twin Creek and Iris River.

Expenditure in 1985-86 amounted to \$0.788 million and the total cost for the last four financial years to 30 June 1986 was \$3.008 million.

UNCLASSIFIED LOCAL ROADS**MAJOR CONSTRUCTION PROJECTS****SOUTH-EAST DISTRICT****FLAGSTAFF GULLY LINK ROAD**

Clarence Council were asked to undertake the design for the Link Road in September 1984 on behalf of the Department. The road, when constructed, will be handed over to the Council as its responsibility for maintenance. The design was completed to enable construction activities to commence in April 1985 and complete the work in the 1985-86 financial year. The Link Road forms a leg of the Mornington Interchange which is associated with the Bellerive Bypass. The Flagstaff Gully Link Road was a proposal of the Derwent Region Transportation Study report.

Construction

Construction work on this 1.76 kilometres link road has now been completed and primer sealed. Some difficulty in rock excavation was encountered due to the limitation on blasting in residential areas and H.E.C. tension transmission lines. It is anticipated to have the traffic facilities and seal completed to coincide with the opening of Bellerive Bypass works at the Eastern Outlet overpass and roundabout at Mornington.

Expenditure in 1985-86 amounted to \$1.33 million and total expenditure to 30 June 1986 was \$1.537 million.

GLENORCHY CITY CENTRE BYPASS—STAGE 1

This project involves the construction of a two lane access road extending from Main Road near Chapel Street, passing east of the Glenorchy shopping centre to Elwick Road. The length of the bypass would be approximately 0.9 kilometres.

Further funds were provided in 1985-86 for the acquisition of property associated with this project by the Glenorchy City Council, for the commencement of the construction of the Humphrey Rivulet Bridge by the D.M.R. and for the commencement of roadworks by the Glenorchy City Council.

Expenditure in 1985-86 amounted to \$0.580 million and the total cost of this project to 30 June 1986 was \$0.877 million.

JORDAN RIVER BRIDGE AT BRIGHTON

Work started on this eight span, 103 metre long bridge in July 1984. The new bridge is being built alongside the existing old timber bridge which is subject to load restrictions.

The superstructure consists of pretensioned concrete beams with insitu concrete topping and 50 mm thick asphalt surface. The overall width of 11.1 m includes a 2 metre footpath.

The substructure consists of reinforced concrete abutments and the seven piers each consist of four circular columns with crosshead supported on a single spread footing.

Work on this structure continued intermittently during 1985-86 and the bridge is now expected to be opened to traffic at the end of July 1986. Expenditure to 30 June 1986, amounted to \$0.814 million.

NORTH-WEST DISTRICT

LYNCHFORD ROAD, QUEENSTOWN

Design

A 1.4 kilometre section of this Council road which links into the H.E.C. Newall Road was designed for the H.E.C.

ROAD CONSTRUCTION DIVISION

ROAD MAINTENANCE

Expenditure figures for the financial year 1985-86 for each District are as follows:—

	<i>South-East</i> \$m	<i>North-East</i> \$m	<i>North-West</i> \$m	<i>Total</i> \$m
Routine Maintenance.....	3.114	2.398	2.885	8.397
Reseals	<u>1.409</u>	<u>0.892</u>	<u>1.114</u>	<u>3.415</u>
TOTAL	4.523	3.290	3.999	11.812

The standard of road maintenance during 1985-86 has remained at an acceptable level throughout the State. Of particular note is the high standard achieved on the National Route and Urban Arterial Roads. Several points of interest are listed below.

HEAVY VEHICLES

Heavy haulage associated with recent mining activities on the West Coast has resulted in an increase in the rate of deterioration of Waratah Main Road. Logging activities throughout the State have maintained high axle loadings on the roads, increasing the incidence of weaknesses, particularly in older pavements. Examples of this are the Poatina Main Road and the Lake Highway (Bothwell to Poatina Turn-off) where such rapid deterioration is occurring that the pavement repairs required are beyond the limits of existing maintenance resources.

The pending increase in vehicle loading limits to be introduced before the end of 1986, as a result of the recent Review of Road Vehicle Limits study, will undoubtedly impose an added burden on maintenance to uphold the existing road pavement conditions.

SEALED SHOULDERS

Current Departmental policy is to seal shoulders on new roadworks, and there is an ongoing program of shoulder sealing for some existing roads. The benefits of this policy are beginning to show in the reduce costs relating to shoulder dressings and seal edge repairs, the neater appearance of road sides in general, and the greater safety both for maintenance workers due to reduce exposure to passing traffic, and the road users themselves.

However some difficulties have been encountered with coloured aggregates for shoulder sealing. In the South-East District there is a lack of suitable aggregates, whilst in the North-East District, the softness of available stone and adhesion problems with white silica aggregates are still to be overcome.



KINGSTON BYPASS



SOUTHERN OUTLET DUPLICATION



KINGSTON INTERCHANGE



DEVONPORT MAIN ROAD
Realignment north of Horsehead Creek



MARRAWAH TO HEEMSKIRK ROAD



MORNINGTON ROAD OVERPASS



JORDAN RIVER BRIDGE

ROADSIDE MAINTENANCE (LANDSCAPING)

There is a growing expectation for high quality landscaping in general, and particularly in urban areas. Examples of the high urban standards achieved may be seen around the Tasman Bridge Approaches, East Derwent Highway, Hobart Eastern Outlet, Northern and Southern Outlets in the south, the Launceston Southern Outlet and East Tamar Highway in the north-east and the Burnie Expressway in the north-west. Well developed rest areas appear throughout the State.

The high class of maintenance required to preserve these ever-increasing areas of landscaping developments impinges heavily on the resources and funding of the maintenance organisation.

MAINTENANCE FUNDING

Increasing plant rates, labour and materials costs, coupled with additional works required to be undertaken using maintenance funds, such as major repairs (e.g. slip correction), upgrading of road signs and guide posts/guard fence corner cube delineation, impede the distribution of the maintenance dollar.

As mentioned previously, the increasing landscaping commitment, higher vehicle loading limits and increased road lengths will require additional funding in the future to properly maintain our valuable asset, the Classified Road System.

LANDSCAPING NATIONAL ROADS

MIDLAND HIGHWAY

OATLANDS BYPASS

The contract for landscaping the Oatlands Bypass was completed in 1985-86.

BRIDGEWATER BYPASS

Supplementary planting of 2 000 extra trees and shrubs North of the Southern junction to Bridgewater was carried out by the day labour work force.

LAUNCESTON SOUTHERN OUTLET

STRATHROY TO BREADALBANE

Landscape concept plans have been produced, involving some 10 000 plants. Both cut and fill batters are to be hydroseeded. Cut batters are to be seeded with native grasses and fill batters are to be seeded with suitable native shrub and tree species.

BASS HIGHWAY

PROSPECT BYPASS

A recommendation has been made to hydroseed cut batters with suitable native grass species.

BURNIE EXPRESSWAY STAGE B

Landscape concept plans have been produced for the sections View Road to North Terrace and Oakleigh Crossing to View Road involving some 7 000 plants.

DON TO FORTH RIVER

A recommendation has been made to Hydromulch Don Hill with low growing native shrubs and grasses, using straw and bitumen mulch to protect germinating seedlings from severe coastal winds.

URBAN ARTERIAL ROADS

SOUTHERN OUTLET ROAD—OLINDA GROVE INTERCHANGE

Landscaping of the interchange was completed by the day labour workforce, involving some 3 500 plants.

BOWEN BRIDGE RESERVE AREA

This reserve is adjacent to the former Bailey Bridge site and has been landscaped by the D.M.R.'s day labour work force.

EAST DERWENT HIGHWAY—BRIDGEWATER TO GAGEBROOK

Four thousand plants were used in extra plantings and replacements in this area.

ALGONA MAIN ROAD

Recommendations were made for the cut batters to be mulched with straw and bitumen prior to planting being carried out.

RURAL ARTERIAL ROADS**TASMAN HIGHWAY—WEST OF DERBY**

Recommendations have been made to protect batters with native grasses.

MURCHISON HIGHWAY AT CAM CLIFFS

Experiemental hydromulching was carried out on the major cut batters for approximately 2 kilometres.

PLANNING AND TRAFFIC DIVISION**GENERAL ITEMS****ENVIRONMENTAL STUDIES**

Preliminary environmental investigations were undertaken for a proportion of the road projects of the Department and a number of these subsequently were formally examined by the Tasmanian Department of the Environment.

The Federal Government continues to rely upon the State Department of the Environment to ensure that its own environmental requirements are satisfied.

The contracting of specialist studies in botany and archaeology for road projects in sensitive areas, for example, has required considerable administrative effort and less time is consequently available for 'in-house' investigation of more routine road projects.

Specific work undertaken during the year included:—

1. Submission of an environmental report to the Department of the Environment on Stage 1 of the Davey Street Extension to Tasman Highway.
2. The submission of a supplementary report to the Department of the Environment for the Penguin to Howth section of the Bass Highway.
3. An environmental assessment of the Couta Rocks to Rebecca Road section of the Smithton to Zeehan Link Road. Botanical surveys were arranged for this section of the Blackwater Road to Balfour section and from Balfour to Lindsay River. An archaeological survey was also undertaken for the Blackwater Road to Balfour section.
4. The arrangement of archaeological salvage of middens affected by roadworks on the Arthur Highway between Eaglehawk Neck and Taranna.
5. An investigation into alternative routes for the Arthur Highway between Eaglehawk Hill and Eaglehawk Neck. A section of the old coach road was excavated and recorded.
6. An investigation into the environmental implications of alternative routes for the bypass of Pontville and Brighton is in progress.

TRAFFIC SERVICES**ROAD DATA BASE**

Extensive information about all State and Municipal Roads and road features is currently stored on a dedicated microcomputer and regularly updated from field surveys undertaken by the Road Inventory officers.

This data base reference system has now been digitized for the State Road System. The reference system now comprises Australian Map Grid Co-ordinates for each feature along the road and at sufficient intervals along the centreline to specify 90 per cent of points to within approximately 14 metres of their true position on the ground.

The road features include every road junction or intersection with a State or Municipal Road (except within towns) and each bridge, box culvert, railway crossing, Municipal Boundary, Town Boundary, grid, gate, post office and rest area.

TRAFFIC COUNTING

The 1985 Traffic Volumes Report was produced this financial year, with the minimum of manual effort, through a microcomputer. The data is now stored in a data base, automatically adjusted and the whole data base printed in an appropriate format.

The vehicle volume counting system will gradually change over time, to one of collecting traffic characteristics. This data will include such information as vehicle weights, types, speed, headway distributions and volumes. A start towards this total collection of traffic characteristics has been made with the purchase of a 'Culway'. This machine was designed by the Australian Road Research Board for use by State Road Authorities. In essence, it is a complex device that measures traffic vehicle parameters by a system of strain gauges and vehicle detectors. The strain gauges are mounted within culverts and measures the weight of each individual vehicle passing over the culvert. Trials of the equipment have been made through the year. More extensive tests and use of the equipment is proposed during the next financial year.

TRAFFIC STUDIES

In order to assist with the traffic planning of road projects an extensive number of traffic studies were conducted throughout the year. These ranged from large origin and destination studies conducted by Consultants to small scale road volume studies. With the purchase of a Highway Planning trip forecasting package this year, the Department is better equipped to make more extensive use of origin/destination surveys to forecast traffic patterns for new road projects.

ACCIDENT AND HAZARDOUS LOCATION INVESTIGATIONS

A large volume of complaints by the general public concerning perceived hazardous locations have been investigated throughout the year. The solutions have varied, from recommendations requiring the erection of signs, to redesign of road junctions. The Department is indebted to members of the general public who have directed attention to various hazardous on the State Road network.

RIGHT OF WAY CONTROL

Right of way control has involved a detailed investigation of the function of the proclaimed State Roads within the total road system of Tasmania.

Most roads proclaimed as State Highways or classified Subsidiary Roads have arterial transportation as their prime role and form a part of the State's strategic network.

There are some, however, that no longer perform a significant arterial function and could be considered in the same light as Council feeder or collector or even frontager development roads. Local Councils have been advised that the control of all roadside development on the latter is to be processed in the same manner as for Council roads and no reference to the Department is required.

On State Roads comprising the strategic network the Department has established a preferred hierarchy with graded levels of new development access management depending on the importance of the particular road to the State. By these means it is hoped to be able to eliminate any unnecessary restriction on development while at the same time retaining an essential minimum network to operate as viable arterial traffic routes.

Work has been proceeding on completing the procedures whereby the National Highway between Hobart and Burnie is protected by statutory access control over all sections where it is presently on its foreseeable final alignment. The section between Prospect to Deloraine where the Bass Highway will be on a new alignment and the old highway will become a Council road is not subject to the same degree of control.



'Culway' machine in operation



DMR display—Royal Hobart Show

Levels of new development accesses on the roads of lesser importance within the State system will progressively be controlled where possible through Statutory Planning Schemes or Interim Orders as these are expanded to cover a greater area of the State. In the past only about 10 per cent or so of the State Roads have been within areas covered by planning schemes.

Planning Schemes will be updated and revised at least every five years. This same flexibility will be retained to assess and amend if necessary the levels of access development control on the major roads.

Other matters in relation to the control and management of the State Road system have continued to be dealt with in the Right-of-Way Section and an indication of the extent of the more routine categories is given under the following headings:—

	1984-85	1985-86
1. Subdivisional and Development Matters	404	394
2. Public Utility Service Installations in State Roads	191	135
3. <i>Roads and Jetties Act 1935</i> , Proclamations and Classifications	27	22
4. Matters associated with the updating of access arrangements and the issue of licensed accesses on Limited Access roads	59	30
5. Preparation and co-ordination of advice on new or amended Statutory Planning Schemes and outline Development Plans	15	25
6. General and property access enquiries on States road network	352	428
7. Obtaining and providing advice in relation to Crown land transactions	172	123
8. Miscellaneous matters	23	32
TOTAL	1 243	1 189

ROAD DESIGN DIVISION

GENERAL ITEMS

COMPUTER DESIGN

Increasing use is being made of the 'MOSS' plot and design computer program. Some problems associated with the conversion of 'MOSS' surveys to facilitate their input into the 'TRICS' system have now been solved. Consideration is being given to a suitable training program for Drafting Officers in preparation for the introduction of the 'MOSS' system.

DEPARTMENTAL DISPLAYS AND EXHIBITIONS

The policy of publicising the Department's activities was continued at the Launceston and Hobart Agriculture Shows.

Displays were also provided for the following occasions:—

Public Display Bass Highway, Pateena Road to Westbury.

Enquiry into the Distribution of Federal Road Grants.

The Huon Outlet opening ceremony.

The majority of material was prepared in the Division Drawing Office.

'As Is' ROAD DESIGN

An updated version of the 'As Is' method of Road Design was prepared and published in January 1986.

ROAD DIRECTION SIGNING

Signing on local roads with the exception of zone five in the North-East District, has been completed this year.

Within the Launceston City Centre direction signing has been commenced and several isolated locations within the urban area should be completed in the next financial year.

Similarly signing within the greater Hobart urban areas is largely completed except for a few isolated locations. Some of these locations have been or will be affected by roadworks and consequently signing has been deferred.

TOURIST SIGNING

The reconstituted Tourist Signs Advisory Council held its inaugural meeting on 16 July 1985 and has had three subsequent meetings during this financial year. The Department remains heavily involved in tourist oriented signing and has appointed a Technical Officer to deal with the additional work load and to liaise with tourist entrepreneurs on sign manufacture and erection.

VEHICLE PERMITS

A total of 3 323 permits was issued for the movement of overweight and/or overdimensional vehicles during the year. This compares with 3 549 permits issued during 1984-85.

BRIDGE DIVISION**BRIDGE DESIGN**

The more important designs completed were:—

NATIONAL ROADS**North-West District**

Retaining Walls—Oakleigh Crossing to View Road, Burnie Stage B.

URBAN ARTERIAL ROADS**South-East District**

Mornington Interchange Overpass on Hobart Eastern Outlet.

Proctors Road Underpass on Hobart Southern Outlet.

Kangaroo Rivulet Culvert on Eastern Outlet Road.

North-East District

Percey Creek Culvert on Launceston Southern Outlet Road

RURAL ARTERIAL ROADS**North-East District**

North George River Bridge on Tasman Highway.

North-West District

Hellyer River Bridge on Guildford-Hampshire Link Road.

Wey River Bridge on Guildford-Hampshire Link Road.

LOCAL ROADS**South-East District**

Jordan River Bridge on Rotherwood Road.

Humphrey Rivulet Bridge on Glenorchy Bypass.

JETTIES**South-East District***Battery Point Jetty*

The more important designs in hand but not completed were:—

NATIONAL ROADS**North-East District**

Fourteen Mile Creek Bridge on East Tamar Highway.

North-West District*Bass Highway*

Myrtle Creek Culverts on the section Ulverstone to Penguin.

URBAN ARTERIAL ROADS**South-East District**

Shaw Road Underpass on Hobart Southern Outlet.

RURAL ARTERIAL ROADS**South-East District**

Snug Creek Bridge on Channel Highway

North-East District

Ledgerwood Rivulet Bridge on Tasman Highway Falmouth to Chain of Lagoons Culverts

Scamander River Bridge on Tasman Highway.

North-West District

King River Bridge on a deviation of Lyell Highway

LOCAL ROADS**South-East District**

Lune River on Catamaran Road.

Victorian Dock Bridge for Hobart Marine Board.

JETTIES**North-West District**

Stanley Fishermens Dock.

HYDRAULICS**LAUNCESTON FLOOD PROTECTION SCHEME**

The Launceston City Council almost completed is 1985-86 Maintenance and Capital Works Program together with some additional works approved during the year. This resulted in an over expenditure of the original allocation of \$200 000 by some \$32 000. This expenditure was in marked contrast with the under expenditure in 1984-85 when only \$53 161 was expended from an allocation of \$200 000.

Of the \$232 000 committed expenditure, work on the Kings Wharf Levee accounted for approximately \$72 000, Scottsdale Levee \$59 000, Mowbray Levee \$39 000, Forster Street Flood Grate (Contract) \$60 000 and City Levee \$2 000.

This Department continued to provide engineering liaison and audit of expenditure of State Funds for the capital and maintenance works on the Launceston flood protection system undertaken by the Launceston City Council.

ROAD DRAINAGE AND FLOOD PROTECTION

Site investigations and hydraulic reports were prepared for some 42 kilometres of State roads involving the Channel Highway, Snug; Tasman Highway, Branxholm and Nunamara; Arthur Highway, Eaglehawk Neck; Huon Highway, Geeveston; Coles Bay Road, Apslawn; Hobart Southern Outlet Road, Olinda Grove to the Lea; Hobart Eastern Outlet, Mornington; Bellerive Bypass, Mornington; Smithton to Zeehan Link Road, Rebecca Creek to Temma Track; and Lynchford Road (H.E.C.) Queenstown.

A hydraulic design was completed for the Launceston Southern Outlet Road, Glen Dhu Corridor Section after agreement was reached with the Launceston City Council, the Metropolitan Transport Trust and Lansdell Glass. The resulting flood mitigation scheme takes into account the Council's present combined stormwater/sewerage system, future upgrading of the Council's drainage system, present flooding of the M.T.T. Bus Depot and protection of Lansdell Glass property against run-off from a flood of once in 100 years frequency.

Sizing of major bridge openings was carried out for the South Easck River crossing on the proposed National Route south of Hadspen, and for a proposed new bridge over the Scamander River on the Tasman Highway at Scamander.

Assessments of sizes of forty-four timber bridge replacements were made. These bridges were generally located on Council roads throughout the State, including the Bass Strait Islands.

Complaints by members of the public, against road drainage affecting their properties are noticeably increasing. Of twenty-two complaints investigated by the Civil Designs Section, two were referred by the Minister and five by the Ombudsman. Most complaints were amicably resolved.

Hydraulic requirements, for sections of roads designed by Consulting Engineers, were reviewed. Those roads include the Guildford to Hampshire, middle section; Bass Highway, from Penguin to Ulverstone; Arthur Highway south of Eaglehawk Neck; Safety Cove Road; Smithton to Zeehan Link Road, from Blackwater Creek to Balfour; and Devonport Main Road at Quoiba.

OTHER MARINE WORKS

Arthur Lake Boat Ramp (Proposed)

Following a request from the Director General of Lands, for an independent appraisal of the proposal, a site inspection was made and a report prepared. The conclusion reached was that the ramp proposal was not economically feasible.

Battery Point Jetty

As a result of the condemning of an old timber jetty at the previous Purdon and Featherstone Slipway site, a new jetty was constructed at a cost of \$0.130 million to the Lands Department. Constructed in reinforced concrete, the jetty is 56 metres long $\times$ 3.5 metres wide and complete with close fendering, lighting, water supply and an onshore area for manoeuvring motor vehicles.

BRUNY ISLAND FERRY TERMINALS

Consulting Engineers Stephenson Maunsell and Partners (S. M. & P.) had submitted a feasibility study into the installation of dolphins to aid berthing in strong north easterly weather at Roberts Point. After due consideration of the Study S. M. & P. were engaged to carry out detailed design and drafting for one permanent dolphin.

Work was carried out to change the remote controls for the ramp operation at Kettering and Roberts Point from 240 volt to 24 volt operation in the interest of crew safety.

Repairs were effected to damaged fenders at Kettering.

CYNTHIA BAY, LAKE ST CLAIR

Following detailed site investigations for proposed boat handling facilities, a new jetty for four boats and an extension of the existing boat ramp are programmed for construction late 1986. The works are to be financed by the National Parks and Wildlife Service and are estimated to cost \$0.110 million.

GRASSY WHARF PAVING

For the smooth operation of heavy forklift trucks, some 624 square metres of paving is required in front of the cargo shed. Interlocking concrete paving blocks were purchased and delivered for the King Island Marine Board to arrange the laying work which is well advanced. Cost of the purchase and delivery was \$20 634.

BRIDGE MAINTENANCE

BOWEN BRIDGE

Work undertaken included the sealing of cracks in the caisson caps and the transverse insitu joints at mid spans. The design for the access ladders to the water main inspection trolley was submitted and approved. Work continued on scupper modification and cleaning.

DENISON CANAL SWING BRIDGE

The hydraulic system was overhauled for the first time since the bridge was constructed in 1965. The steel open deck roadway and footpath were recoated with anti-skid paint. Stabilization of the eroding canal bank was not continued. Vessels passing through the canal in 1985-86 totalled 1 191 a decrease of eighteen on the previous year.

BRIDGEWATER BRIDGE

This bridge continues to show signs of deterioration as a consequence of the dynamic effects of the increasing number of heavy high speed road vehicles and increase in train loading. Imposition of a load limit or work to strengthen the structure will be necessary in order to prolong its useable life. The inspection program continued with settlement monitoring, fatigue crack and timber pile inspections.

A further three spans of the road and railway structures were grit blasted and painted completing all the southern approach spans. Design and purchase were completed for the replacement of the 1946 petrol auxiliary power plant and transmission. This will take the form of a diesel power plant and variable speed fluid coupling. Approval was granted to Australia National Railway for the installation of a walkway between the road and rail superstructures to improve safety when shunting. Two additional sets of traffic lights were installed to improve safety for the roadway gates.

Repairs were carried out to the bituminous surfacing of the lift span and a prime and seal coat was added to reduce its permeability. Restoration to the approach span piers, expansion joints and causeway embankment were carried out.

Lift span openings for the year amounted to 505.

These were required for:—

- Newsprint vessels—353
- Ferry and Cruise Boats—25
- Private pleasure craft—321
- Maintenance purposes—7

There was an increase of 105 vessels over the previous year. Australian Newsprint Mills have discontinued the transport of newsprint by water.

TASMAN BRIDGE

Following commissioning of the inspection gantry a comprehensive inspection of the structure below deck level between the main east-west abutments was carried out. This was the first major inspection since 1982 and enabled some crack sealing to be carried out and the removal of a large quantity of guano from the beams. Upstream footway steel plates were coated with anti-skid paint and the downstream plates are programmed to be painted this financial year.

Specifications were prepared and tenders called for the supply, installation and commissioning of current and wind sensors to aid ship navigation through the bridge. A design was prepared for a suitable raft for the placement of these sensors.

Survey work continued on the monitoring of the 'Lake Illawarra'. The vessel represents no danger to the bridge.

REPAIRS GENERALLY

On the Franklin River Bridge, Frankford Main Road, extensive repairs are under way to replace the shear keys between beams. Restoration was undertaken to the reinforced concrete piles to repair corroded areas at the Golden Fleece Bridge, St Helens and Cam River Bridge, Somerset. A fence and girder painting program for steel bridges was commenced in the North-East District. Fences were painted on the following bridges: Macquarie River Bridge, Ross, South Esk River Bridge, Perth, South Esk River Bridge, Hadspen, Liffey River Bridge at Carrick, North Esk River Bridge at Launceston, Golden Fleece Bridge at St Helens, Swan River Bridge at Cranbrook, Brushy River Bridge and Wye River Bridges at Swansea, Break O'Day River Bridge on Esk Main Road and the South Esk River and Fingal Bridges on the Mathinna Secondary Road. Work continued in the North-West District on repainting of the girders on the Don River Bridge. In the South-East District timber planked pedestrian bridges were coated with anti-skid paint.

The statewide inspection program for all steel bridges and work on the bridge inventory continued.

JETTIES, SLIPWAYS AND FISHING FACILITIES

GENERAL MAINTENANCE

An amount of \$82 126 was expended on maintenance and minor improvement to State jetties and slipways as follows:—

	\$
Binalong Bay Breakwater.....	5 396
Bruny Island Ferry Berths.....	22 730
Cape Barron Island Jetty	398
Jetty Inspections.....	1 329
Miscellaneous and Minor Repairs	5 072
Port Davey Light.....	1 443
Slipways	18 665
Stanley Fishermen's Dock	23 892
St Helens Point Light	386
Swansea Jetty	1 775
Triabunna Deep Water Jetty	1 039

CONSTRUCTION AND ROUTINE RECONSTRUCTION

1. BOOMER BAY BOAT RAMP

Construction was completed at a cost of \$87 315 of which \$68 792 was expended in 1984-85. Having a ramp 4.5 metres wide on a 1 in 8 gradient and 1.5 metres below water at the seaward end, this facility is complete with a boarding pier, areas for parking and overhead lighting.

2. COUTA ROCKS BOAT RAMP

To reduce the high estimated cost for a facility designed in 1984-85, a revised design and estimate was prepared. However, construction did not proceed, as there was no consensus between the parties concerned, regarding the need for the facility, or the acceptance of legal responsibility for public safety.

3. CURRIE WHARF STRENGTHENING

This wharf is retained by the King Island Marine Board essentially for the use of the local fishing industry. To secure the structure against storm damage and to enable a vehicle load limit to be waived, the Board carried out strengthening works for which a payment of \$29 276 was made.

4. DARLINGTON JETTY-WAVE PROTECTION

A consultant's study of wind and wave conditions, which make hazardous the disembarkation and embarkation of tourists was undertaken. Plans were then prepared for an 'L-shaped' jetty extension with a 'skirt' breakwater wall. Cost of the study was \$3 547.

In advance of construction, programed for 1986-87, materials were purchased at a cost of \$40 898.

5. DENISON CANAL DREDGING

Following the preparation of plans and specifications, for the dredging of the 700 metre and 900 metre approach channels, tenders were called for the work to be carried out by contract early in 1986-87.

6. DUNALLEY JETTY FENDERING

Improved close fendering, with truck tyres affixed, was provided along 60 metres of berthing face at a cost of approximately \$35 000.

FISHING PORTS UPGRADING

These projects result from the Government's adoption of the Tasmanian Fishing Port Study of May 1982 and the works listed therein.

1. CURRIE

Harbour Model Study

It is known that moored vessels are afforded protection from 'short' wave storms by a natural reef across half the harbour entrance. However, at times, the 'short' wave storms combine with 'long' wave surge to penetrate the harbour and threaten the safety of vessels, the wharf and shore installations.

To determine the effectiveness of breakwater protection, the Water Research Laboratory of the University of N.S.W. was engaged to carry out a study for which a physical model of the harbour was constructed to a horizontal scale of 100 and a vertical scale of 50.

In 1985-86 testing for 'short' wave penetration, for proposed breakwater configurations, was concluded and testing for combined 'short' and 'long' wave penetration will follow early in 1986-87.

Progressive costs totalled \$31 456.

2. KETTERING

Little Oyster Cove Port Plan

A final report was received from the Consultants engaged to carry out a study intended to identify possible future facilities for fishermen and to be a guide for the orderly development of the port as a whole. A payment of \$5 200 was made to the consultants.

3. LADY BARRON

Port Improvements

As an addition to extensive improvements for both berthing and navigation, carried out in 1984-85, the power supply system was upgraded and power outlets were installed on the wharf for connection to the new town supply.

Carry-over expenditure on the 1984-85 works in 1985-86 was \$11 259 and cost of the power supply work was \$19 239.

4. PORT ARTHUR

Jetty Extension

The use of this jetty for privately conducted tours to the Isle of the Dead necessitated the construction of a low-level extension for the tour vessel 'Bundeena'. This additional berth has the beneficial effect of making the jetty more accessible for the operation of fishing vessels.

Cost of construction was \$21 343.

5. ST HELENS

(a) Georges Bay Barway Model Study

Following the construction of a model of the barway and inner delta in 1984-85, the Water Research Laboratory of the University of N.S.W. has now completed testing and has provided a Final Report dated May 1986. From the Model Study it is concluded that a deeper and stable navigation channel across the barway will result from extending the existing 470 metre inner delta channel training wall some 890 metres seaward.

(b) Georges Bay Barway Walls

Acting on this advice, construction of a 230 metre Stage I extension is well advanced using rock quarried locally.

Recorded expenditure for 1985-86 totalled \$205 061 which included \$53 956 for infilling of a beach lagoon, identified as a health hazard, and the planting of marram grass to stabilise the expanse of beach which has formed on the seaward side of the wall.

6. STANLEY

Fishermen's Dock Upgrading

While constructing a 140 metre long new wharf face across the northern (shore) side of the Dock, some 120 metres of sheet piling was driven and 80 metres was anchored back into compacted backfilling which will form an extensive area for servicing berthed vessels.

Dredging has been carried out to a depth of 3.3 metres below low water-level to enable deeper draft vessels to manoeuvre within the Dock and to berth at the new wharf.

A 22.5 metre extension of the existing unloading wharf, at the eastern end of the Dock, was designed and drawings prepared.

As part of the upgrading work, a new boat launching ramp was constructed outside the Dock and adjacent to the Old Wharf. This ramp is complete with stepped landings protected by a rock-fill breakwater.

Expenditure on all works was \$597 841 in 1985-86 bringing the progressive total to \$904 268.

7. STRAHAN

(a) Boat Launching Ramp (Proposed)

The existing council ramp is too narrow for the launching and retrieval of abalone boats, it is in an exposed situation and lacks adequate parking and manoeuvring space for vehicles.

At Mill Bay, West Strahan, a suitable site is available for development of a proper ramp facility which is estimated to cost \$140 000.

(b) Slipway Duplication (Proposed)

To increase the capacity of the existing slipway facility, a second set of ways with cradles and winch is under consideration for vessels up to 100 tonnes displacement. Estimated order of cost is \$500 000.

8. TRIABUNNA

(a) Charles Street Jetty Channel Dredging

To make the jetty accessible for fishing vessels at all stages of the tide, dredging of a 1.2 kilometre long navigation channel is necessary. Plans and specifications were prepared and tenders were called for the dredging to be carried out early in 1986-87.

The Department is proceeding with the construction of containment bunds in advance of the dredging contract for the disposal of the dredge material and to provide useful areas of foreshore reclamation.

Exploratory excavations, along the path of the proposed channel and in the area of a proposed turning basin, incurred an expenditure of \$13 020.

(b) Spring Bay Port Plan (Triabunna)

Consultants were engaged to carry out a study which would identify possible future facilities for fishermen and to be a guide for the orderly development of the port as a whole.

The cost of the study together with the final report amounted to \$5 525.

(c) Triabunna Slipway Upgrading

Further to the extensive work carried out in 1983, 1984, 1985, one of the two original 20-year-old timber cradles, on the branch ways, is to be replaced.

Materials for a galvanised steel cradle were purchased at a cost of \$4 066.

PLANT DIVISION

GENERAL

The Plant Division, which incorporates the Workshops at Moonah, Launceston and Ulverstone, provides plant and workshop facilities for the Department's construction and maintenance activities on roads and bridges.

The income from plant hire amounted to \$9.984 million. The amount to hire paid directly to outside owners and contractors amounted to approximately \$15.984 million.

PLANT OPERATIONS

An amount of \$1.507 million was spent on equipment purchases and replacements, including, 1 Mack Prime Mover Truck, 3 Jacobson Ride-on-Mowers, 7 Sleeping Huts of new design, 115 (approx) light vehicles, 1/150 KVA Generator.

TRAINING AND DRIVER TESTING

During the year 234 people, including 159 from other Departments, were tested and issued with D.M.R. driving permits.

One day Defensive Driving Seminars were held at Moonah, Launceston and Ulverstone with a total attendance of 81.

VEHICLE ACCIDENTS

The frequency of vehicle accidents increased during 1985-86 from 0.36 accidents per 100 000 kilometres to 0.81 in the current year. Personal injury has been negligible. Fourteen accidents resulted in major damage in excess of \$1 000.

APPRENTICES

Participation in the Hydro-Electric Commission's training scheme was again made available to first year metal trades apprentices from Moonah, as well as that of the Associated Pulp and Paper Mills for Ulverstone apprentices.

Martin Baker, a fourth year apprentice diesel fitter at the Launceston Depot, was chosen Top Apprentice Automotive Trades, by the Training Authority of Tasmania.

The number of apprentices currently undergoing training in the Department's workshops is fifty-five (55) made up as follows:—

Moonah—23
Launceston—19
Ulverstone—13

DEPOTS AND WORKSHOPS

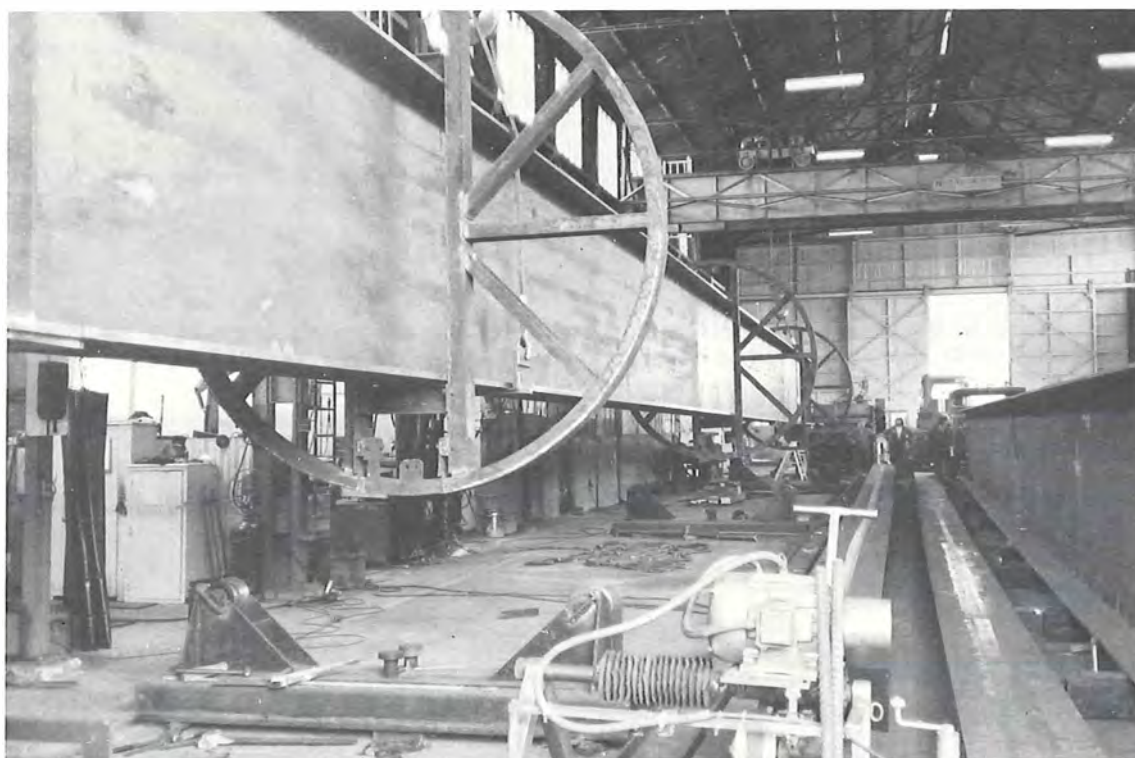
The Workshop Production Account recorded an annual turnover of \$7.796 million.

Signs to the value of \$0.420 million were manufactured by the Moonah Sign Shop.

Major work carried out during the year, apart from the main function of plant repairs, and miscellaneous steel construction, consisted of the manufacture of eight beams for the Hellyer River Bridge, valued at \$0.204 million. Moonah Workshop also produced 800 tonnes of reinforcing steel.



New Mack prime-mover



Steel beam fabrication Moonah workshops

WORKSHOP EQUIPMENT PURCHASED

Graphix Letter Production System—Sign Shop Moonah
Reinforcing Bar Guillotine—Moonah
Vehicle Hoist—Ulverstone
Drilling Machine—Launceston

Depot improvements included:—

Concreting section of roadway—Moonah
Building insulation—Launceston
Extension to Machine Shop—Moonah
Yard sealing—Ulverstone

FINANCIAL STATEMENTS

The Plant Division accounting operates with an April to March financial year. The Division trading account is the Road Construction Plant Suspense Account which must be kept as required by section 6 of the *Roads and Jetties Act 1935*.

The Road Construction Plant Suspense Account financial statements for the period are reported in Annexure D.

MATERIALS AND RESEARCH LABORATORY

1. GENERAL

During the year steps were taken to remove Materials and Research from the Road Construction Division. The Materials and Research Engineer is now responsible to the Assistant Director Construction. The move has facilitated the flow of M & R reports to the various Divisions and Districts. M & R was also given an increased responsibility in the preparation of the geotechnical data in contract documents.

In recognition of the increased test requirements and the importance of test data in the contract administration, Scientific Officer positions were created in the N.E. and N.W. Districts. The Scientific Officers, when appointed, will manage the laboratories and provide additional man-power and technical resources at the District level.

2. FIELD SECTION

The Field Section undertakes geotechnical and pavement investigations statewide and field construction control investigations throughout the South-East District.

Eighty-five geotechnical and pavement investigations were commenced during the year.

The largest project has been the King River Bridge investigation which continued throughout the whole year.

(a) PAVEMENT STUDIES

Pavement studies are used to assess the remedial treatments appropriate to existing roads.

(b) DEFLECTION TESTS

Seventeen requests were received and 72.5 kilometres of road were tested using the Benkelman Beam. Rebound deflection and curvature function criteria have been used to establish overlay and rehabilitation requirements in conjunction with test pit data.

(c) TEST PITTING

Test pitting has usually been used to complement and supplement the deflection tests. This year 202 pits were dug on 70 kilometres of road.

(d) GEOTECHNICAL INVESTIGATIONS

These investigations utilise a variety of resources and equipment including geological survey, air photo interpretation, geomorphological mapping, geophysics, drilling, penetrometer probing, trial pits etc. The drilling is usually undertaken by the Mines Department. Contractors or departmental resources are used for the trial pits and excavations. The remaining services are undertaken by Materials and Research.

The main projects are listed under the following categories:—

- Road Corridors.
- Building Sites.
- Bridges.
- Miscellaneous.

(i) Road Corridors

Midland Highway:—

- Powranna to Epping Forest.
- Kempton to Constitution Hill—Climbing Lane.

Bass Highway:—

- Prospect to Hadspen.
- Hadspen to Deloraine (Preliminary).
- Deloraine Bypass (Supplementary).
- Ulverstone to Penguin.
- Penguin to Howth.
- Smithton Bypass.

Tasman Highway:—

- Davey Street Extension.
- Ringarooma to Branhholm.

Arthur Highway:—

- Hawks Hill to Eaglehawk Neck.
- Eaglehawk Neck to Masons Point.

East Tamar Highway:—

- Williams Creek.
- 14 Mile Creek.

West Tamar Highway:—

- Bradys Lookout.

Hobart Southern Outlet:—

- Proctors Road to Kingston.
- Bellerive Bypass (Supplementary).

(ii) Building Sites

This work was undertaken for the Department of Construction. The major projects were:—

- Mersey General Hospital—Latrobe.
- North-West General Hospital—Burnie.
- Launceston Community College.

(iii) Bridges

The site feasibility investigations for the proposed new bridge on the King River at Crotty has been the largest and one of the most complex investigations undertaken by Materials and Research in recent years. The new bridge is necessary to replace the existing bridge which will be flooded with the damming of the King River near Crotty. The proposed bridge is in the order of 300 metres long and set on piers over 40 metres high. The site is geologically complex and has low stability. An extensive drilling program was undertaken using rigs from the H.E.C. and Longyear.

Other bridge sites investigated included:—

- Snug Rivulet Bridge.
- Scamander River Bridge.
- Lune River Bridge.
- 14 Mile Creek Bridge.

(iv) Miscellaneous

Vibration monitoring was used to assess the effects of construction activities on adjacent structures on four jobs:—

- Flagstaff Gully Link Road.
- Tasman Highway at Fingerpost.
- Burnie Stage B.
- Constitution Dock (effect of pile driving).

Subsurface investigations were conducted at Denison Canal and Spring Bay to assess the nature of materials in the existing shipping channels for reporting in the contract documents for the dredging of the two sites.

Quarry site investigations were undertaken near St Helens to locate material for the construction of marine break-waters for the St Georges Bay bar.

(v) Construction Control

Demand for construction control in the South-East District was less than for 1984–85. There were only two contracts of any significance:—

- Algona Main Road.
- Kingston Bypass.

A significant proportion of the day labour works undertaken in the South-East involved mainly earthworks, reducing demand for testing services.

A variety of construction control requests came from the Department of Construction (4) and other state and federal government organisations (9).

3. LABORATORY SECTION

During 1985–86 there has been a fluctuating demand for laboratory services with a downturn in the latter part of the year.

(a) BITUMEN AND BITUMINOUS MATERIALS

(i) Quality control testing on Class 170 bitumen from Selfs Point continued and a total of twenty-two test certificates were issued. British Petroleum are no longer doing specification tests on this bitumen and are accepting materials and research test reports for which a payment is made. This is a very satisfactory arrangement for both parties.

Control tests were made on a further eighteen samples taken from the Department's mobile asphalt plant.

(ii) One bitumen adhesion agent and three rubber kerosene solutions were tested in connection with the respective tenders.

(iii) Primer kits were prepared to assist field engineers in the selection of the correct grade of primer.

(b) ASPHALT**Mix Designs**

Designs were prepared for the following jobs.

- (i) North-East—14, 10 and 7 mm mixes for D.M.R. Plant.
- (ii) Emoleum North-East—job mix approval for 10 and 14 mm mixes for Launceston Southern Outlet.
- (iii) Roadways South-East—job mix approval for revised 14 mm mix for general contract work.

(c) COMPACTION

A total of 11 lots were tested for compliance with the requirements of Specification No. 34 using the Nuclear Meter. This is a decrease of some 80 per cent over 1984–85 and reflects the small amount of asphalt placed in the South-East District during the current year.

(d) QUALITY CONTROL

The mobile laboratory was engaged in the quality control of asphalt produced at the Department's plant in the North-East District for a period of about six months between November 1985 and May 1986. A total of 95 mix and 79 aggregate samples were tested and as a cross check a further 5 mix samples and 130 Marshall specimens were sent to the control laboratory for testing.

A total of 81 asphalt samples were tested from contracts in the South-East and North-West Districts. Marshall tests were done on twenty-seven of these samples.

(e) CONCRETE*Quality Control*

A total of 862 cylinders were tested during the year made up as follows:—

Department of Construction—228
Bridge Division South-East—416
Outside Clients—218

This is an increase of 10 per cent over 1984–85. A total of 436 were cast by Materials and Research staff particularly on bridge jobs in the South-East District.

Other Concrete Work

(i) The laboratory prepared and tested thirteen trial mixes of lean mix (roller compacted) concrete in connection with the Craighourne Dam. In addition 190 cylinders were crushed for quality control during the construction of the dam. This work was done in association with the consultants, Gutteridge, Haskins & Davey and is chargeable to the Rivers & Water Supply Commission.

(ii) A mix designed for the National Parks and Wildlife Service using a natural aggregate from the Lake St Clair area.

(iii) As a service to the field engineers the laboratory continued to prepare measured doses of aluminium powder and Methocel for use in grouts.

(f) SOILS AND AGGREGATES*Pavement and Bridge Investigations*

1 768 samples were received from soil surveys for bridge and pavement investigation, design and failures.

Materials Investigation and Control

1 478 soil and aggregate samples were submitted to the Central Laboratory for investigation and control purposes including 445 from outside clients.

Miscellaneous

(i) The Methylene Blue Tests was developed further and is now suitable for the routine control of the plasticity of road making materials.

(ii) The 'Benburn' sand deposit near Perth was investigated to determine its suitability for use in asphalt.

(g) SOIL MECHANICS

Testing was done in connection with the following jobs:—

King River Bridge—feasibility investigation.
Mersey Hospital—foundation investigation.
Launceston Community College Footbridge.

(h) SOIL STABILISATION

No cement or lime design was done during the year and this work was confined to a limited number of mechanical stabilisation designs for day labour jobs.

(i) PAINT

Laboratory tests were done on three control samples of road marking paint.

The laboratory participated in an interlaboratory proficiency testing program on paint organised by the National Association of Testing Authorities. The results are not yet available.

(j) PIPE TESTING

Pipe testing continued on behalf of the Building Regulations Board. The two Launceston factories producing UPVC pipe were each inspected twice during the year. Four (4) test reports were issued involving 272 separate pipes.

4. MISCELLANEOUS TESTING AND INVESTIGATIONS**(a) BUILDING MATERIALS**

108 building bricks and blocks were tested for outside clients.

(b) ROAD SIGNS AND MARKING

Two samples of glass beads were tested for tender and contract purposes.

(c) MISCELLANEOUS

Seven types of battery were evaluated on behalf of Supply and Tender to assist in awarding the contract.

(d) SKID RESISTANCE

The Laboratory conducted the following skid resistance testing using the BPN meter:—

Midland Highway—Breadalbane.
East Tamar Highway—Donovans Bay Corner.
Mersey Main Road.
Bass Highway—Don River Bridge approaches.
Bass Highway—Archers Corner.
Bass Highway—Elizabeth Town, Latrobe.

Comparative testing was also done on various dolerite and basalt sprayed seals in the South-East District. These tests again showed that the dolerite maintained a significantly higher skid resistance than basalt, particularly in highly stressed situations.

(e) EQUIPMENT CALIBRATION

Thermometers, pressure gauges and dial gauges were calibrated for various departmental clients. The laboratory continued to calibrate loadometers for Transport Tasmania and a further 56 test certificates were issued.

ADMINISTRATION**GENERAL**

The Department continues to comply with Government policy and operate with reduced staffing levels in a number of areas. The combination of staffing restrictions together with the retirement of a significant number of experienced long serving officers, has placed considerable pressure on the staff of many sections of the Department.

The introduction of the Tasmanian State Service Act on 1 December 1985, changed significantly the administrative procedures within the Department. This legislation has given the Department greater autonomy and flexibility in the allocation of limited staff resources to the areas of greatest need.

STAFF

At 30 June 1986 there were 396 State Service Act Positions and fifty-seven Public Works Construction Act Positions on the Department's establishment. The actual number of staff employed was 392 State Service Act Staff and fifty-seven Public Works Construction Act Staff.

The composition of this staff was:—

STATE SERVICE ACT STAFF

Administrative Officers, Accountant & Clerical Staff	121
Professional Engineers	81
Surveyors	18
Scientific Officers, Technical Officers, Engineering Assistants and Technicians	69
Drafting Officers	56
Typist and Other Keyboard Classifications	34
Other Classifications	13
TOTAL STATE SERVICE ACT STAFF	392

PUBLIC WORKS CONSTRUCTION ACT STAFF

Survey Assistants	38
Plan Printers	3
Inspectors	11
Other Classifications	5
TOTAL PUBLIC WORKS CONSTRUCTION ACT STAFF	57

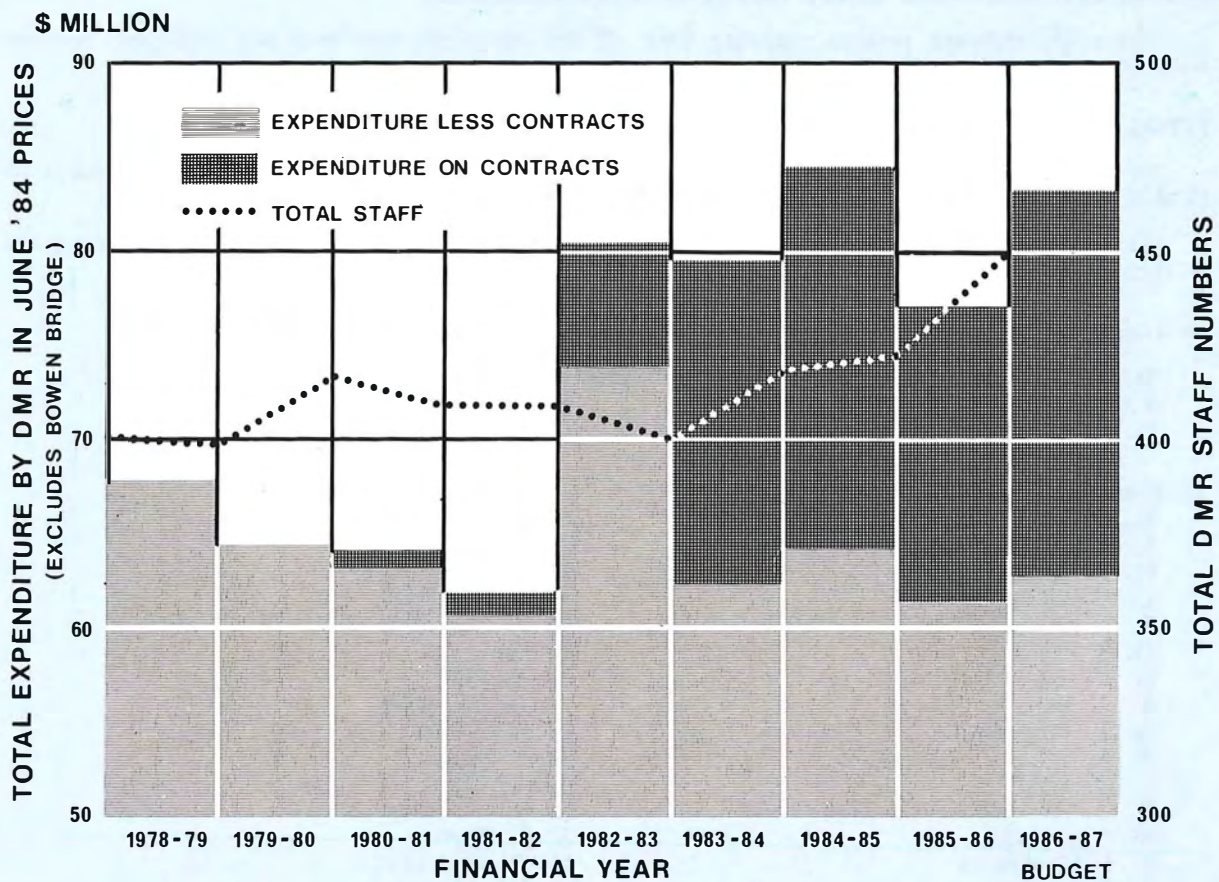
The distribution of staff to the various locations of the Department was as follows:—

STATE SERVICE ACT STAFF

Head Office, Murray Street, Hobart	219
South-East District Office, Derwent Park	32
North-East District Office, Launceston	38
North-West District Office, Ulverstone	45
Central Workshops and Stores, Moonah	36
Materials and Research Laboratory, Derwent Park	22
TOTAL	392

PUBLIC WORKS CONSTRUCTION ACT STAFF

Head Office, Murray Street, Hobart	4
South-East District Office, Derwent Park	13
North-East District Office, Launceston	15
North-West District Office, Ulverstone	17
Central Workshops and Stores, Moonah	5
Materials and Research Laboratory, Derwent Park	3
TOTAL	57



Senior appointments during the year included:—

- K. A. Ryan was promoted to Assistant Director, Design.
- I. D. Harrington was promoted to the position of Administrative Officer from the Housing Department.
- A. H. Wilson was promoted to the position of Division Engineer, Planning and Traffic.
- A. R. Wilson was promoted to the position of Division Engineer, Road Design.
- A. R. Hodgson was promoted to Senior Engineer, South-East District.
- A. D. MacGregor was promoted to the position of Registered Surveyor.
- K. R. Sams was promoted to Chief Drafting Officer Road Design.
- K. G. Lickiss was promoted to Bridge Design Engineer.
- A. N. Fearnley-Sander was promoted to Road Planning Engineer.
- J. R. Gluskie was promoted to Senior Drafting Officer Road Design.

The following long serving officers retired, or resigned during the year:—

- L. J. Baily, Director of Main Roads—39 years.
- D. A. Orpwood, Division Clerk, Bridges—31 years.
- D. R. Welsh, Civil Design Engineer—45 years.
- W. D. Coombs, Assistant Director Design—32 years.
- K. W. Tacey, Bridge Design Engineer—34 years.
- A. G. Free, Engineering Assistant—43 years.
- E. J. Barrenger, Division Engineer Road Construction—26 years.
- L. J. Hancox, Section Stores Officer—25 years.
- M. G. Monaghan, Surveyor—44 years.
- K. M. Thomson, Road Maintenance Engineer—43 years.
- C. E. Crisp, Supervisor—27 years.
- E. Kalle, Survey Assistant—30 years.

STUDY COURSES AND STAFF DEVELOPMENT PROGRAM

There are eighteen persons receiving time off for study purposes and two additional persons hold University Scholarships in Engineering.

LONG SERVICE AWARDS

In November 1985, the Minister for Main Roads, the Hon. I. M. Braid presented awards to D.M.R. employees who had completed 25 years and 35 years service.

There were six employees who had also completed 40 years service and presentations were made to them in January 1986 by the Premier, the Hon. R. T. Gray.

40 Years Service

D. L. Burridge
P. S. Forrest
D. P. King

M. G. Linton
M. G. Monaghan
D. R. Welsh

35 Years Service

K. M. Thomson
J. J. Dwyer
R. G. Gamble
L. J. Baily
P. W. Wiggins
H. S. Millar
G. D. Luck
K. R. Sams
A. T. Boutchard
B. A. Synott
L. D. Haas
P. G. Howlett
M. V. Heather
F. J. Blackberry
C. F. Clayton
E. C. Barrett

G. F. Arnol
R. V. Martin
A. J. Blake
R. O. Sperring
T. V. Martin
L. Krawczyk
N. P. Pullen
A. L. Browning
F. J. Cooper
L. T. Swan
W. J. Collis
B. K. Shearing
S. P. Davie
H. R. Bucknell
D. D. Dawkins
E. L. Connelly

25 Years Service

H. F. Otto
D. G. Pearton
L. E. Berry
G. A. Triffit
M. D. Pearce
L. Munro
K. W. Tacey
J. W. Direen
J. R. Gluskie
D. J. Wiggins
K. C. Raspin
A. R. Palmer
G. S. Griggs
J. Brassington
R. V. Kean
W. D. Coombs
D. L. Bourke
A. S. Elwell
K. M. Swan
J. S. Locke
E. E. Free
D. A. Bannerman
E. J. Claydon
G. W. Broughton
C. W. Kemp
W. Kowaluk
W. V. Pullen
S. R. Lawson

G. Surtees
L. W. Hills
D. A. Orpwood
J. J. Foley
L. F. Lovell
J. Martak
A. F. Scott
R. J. Bezzant
H. Van Hulst
T. O. Workman
D. S. Chaffey
I. Prpic
R. B. Bender
G. H. Lang
W. C. Reardon
S. F. Manley
E. G. Quinn
P. Howard
H. J. Wells
J. Grdas
D. J. Delaney
L. K. Nichols
J. F. Hennessy
G. V. Cooper
H. J. Clayton
L. P. McKay
M. R. Wright
H. K. Brown

T. A. Howells
 J. B. Coad
 P. N. Bartels
 M. H. Fazackerley
 L. Kopanski
 L. J. Smith
 R. E. Voss
 L. C. Hills
 K. Parums
 W. K. Schoe
 T. G. Maxwell
 C. Purton
 C. Smith
 T. W. Bligh
 D. Seaton
 L. Sheehan
 L. W. Snare
 D. B. Smith
 G. N. Marshall
 J. C. Howard
 W. T. Butcher
 J. E. Linnett
 R. E. Press
 A. F. Castle
 C. E. Crisp
 M. J. Mitchell
 I. C. Pyke
 G. D. Wherrett
 G. S. Knight
 W. J. Linnett
 M. E. Shearing
 A. E. Bennett
 P. W. J. Howlett
 F. G. Joseph
 D. R. Marshall
 M. L. Jones
 T. J. Harback
 T. W. Hill
 G. L. Kemp
 K. G. Lickiss
 L. W. Quinn
 E. Stefaniw
 A. P. Brown
 D. W. Chamberlain
 I. L. Young
 H. J. Palmer
 B. J. Watkins
 E. J. Barrenger
 G. K. Hosking
 C. L. McKnight
 E. G. Nickstadt
 A. Sheehan
 R. Barrett
 A. Williams
 R. A. Lynd

M. V. Garwood
 T. R. Richards
 J. L. Burt
 B. W. Barden
 V. C. Webb
 W. T. Sutton
 M. Denman
 F. J. Kaye
 F. L. Phillips
 M. R. Nettlefold
 V. C. Mullins
 N. Hoyle
 W. C. Dilger
 N. Turner
 B. W. Duncan
 A. W. Bird
 L. E. Riley
 H. Geard
 D. R. Garwood
 R. A. Gleeson
 G. G. Mountney
 A. F. Hanks
 L. J. Lawless
 J. C. Burn
 G. D. Fleming
 K. Clifford
 R. D. Morgan
 P. L. Stowe
 R. W. Hopkins
 M. T. Palmer
 I. J. Pook
 M. B. Dicker
 K. S. Davies
 R. J. Douce
 G. H. Saltmarsh
 R. F. Kennedy
 M. Smaniotto
 L. Blake
 C. R. Keeley
 F. R. Douce
 L. E. Mosley
 R. P. McCullagh
 C. R. Best
 R. T. King
 R. J. Best
 V. J. Jackson
 D. O. Von Stieglitz
 J. W. Millar
 B. Hortle
 G. F. Briscoe
 W. R. Clements
 J. R. Bramich
 K. F. Donovan
 R. B. Woolley
 A. J. Callaway

INDUSTRIAL

Wages increased in line with national wage decisions. A number of site allowances were granted to cover employees working on road projects.

As at 30 June 1986 the number of employees engaged in workshop and field operations were:—

Workshops and Depots	237
Construction and Maintenance of Roads and Bridges	960
	1 197

Retirements for the year totalled twenty-seven including a number who served the Department for many years.

Retirements due to age:—

L. T. Swan, Labourer—36 years service
 A. L. Browning, Labourer—36 years service
 V. T. Lowrey, Labourer—35 years service
 L. E. Berry, Labourer—34 years service
 L. K. Nichols, Foreman—34 years service
 L. E. Mosley, Labourer—32 years service
 J. W. Miller, Foreman—30 years service
 L. Kopanski, 2nd Class Machinist—28 Years service
 C. Purton, Foreman—27 years service
 E. J. McCarthy, Foreman—26 years service
 A. F. Otto, Labourer—25 years service.

Retirements due to ill health:—

A. J. Blake, Labourer—37 years service
 F. J. Kaye, Welder—30 years service
 *R. R. Dowsett, Tradesman—28 years service
 *N. J. Watson, Plant Operator—27 years service
 *R. M. Taylor, Labourer—25 years service

* Deceased

WORKERS' COMPENSATION

The following payments under the Workers' Compensation Act were made during the year.

	\$
Weekly Payments.....	296 781.29
Medical Services.....	139 875.78
	\$436 657.07

COMPUTER INFORMATION SERVICES SECTION

This Section is providing services to both technical and non-technical computer users to improve their efficiency of operations.

The services available are consulting, system development and access to a variety of bureaux services including State Computer Centre, Transport Commission, CEANET and CSIRO.

Major technical users are the Design Division who are using the in-house developed TRICS road design software and increasingly are taking advantage of the MOSS computer aided drafting package on CEANET. It is expected that the on-line version of MOSS will be available in-house during the next financial year. A continuing service is being offered in the tailoring of already available technical software to run locally.

Major non-technical applications being used are the Transport Commission's salaries system, Department of Public Administration's SSPS personnel system, a Plant Control System, a Wages system for the day labour force and the Road Needs Data Base.

An important aspect of the Section's activities is the maintenance of the PRIME 2655 computer based communications node which provides virtual access of any terminal to any bureau, and also allows the printing of any reports from these bureaux in Head Office.

INDUSTRIAL SAFETY

Safety Committees were active in District and Depot complexes during 1985-86.

Unfortunately in two Districts, Lost Time Accidents rates increased by 18 and 12 respectively from the previous year, which was a disappointing result. One District lowered its rate by 3 and one Sub-District lowered its results by one. The remaining areas maintained their previous levels.

There was an increase of 8 per cent in Lost Time Accidents for the year and a need exists for a greater effort from all Safety Committees and Supervisory Staff if this trend is to be reversed in 1986-87.

During the year four National Safety Council Awards were gained by the Department. Two were won by field gangs and two by Safety Groups at Moonah Depot.

Safety groups at Moonah Depot were established in January 1985 and in just over twelve months they gained two Safety Awards.

As part of the Accident Prevention Program courses were conducted in:—

- (a) Chain Saw Operation.
- (b) Apprentice Induction.
- (c) Scaffolding and Rigger.
- (d) Coxwain.

First-aid training to the St Johns Ambulance Certificate level was conducted in all Districts with eighty-one employees gaining Awards.

PROPERTY ACQUISITIONS

During 1985-86 a total of 155 acquisitions were completed, 160 were commenced and, at the end of the financial year, 310 acquisitions were in progress. One hundred and twenty-four of the acquisitions in progress were subject to compulsory process compared with 143 at the end of the previous year. Expenditure on property acquisitions for the year was \$3 026 815 compared with \$4 311 453 for the proceeding year. Included in this total was an amount of \$1 768 181 for National Highway Projects.

The major areas of expenditure included the purchase of properties affected by the construction of the Bellerive Bypass, Launceston Southern Outlet, Bass Highway (Don Hill to Ulverstone), Burnie Expressway and the Deloraine Bypass. Many minor property acquisitions resulted from the reconstruction of the Huon Highway, Lyell Highway, Tasman Highway and the West Tamar Highway.

CONTRACTS

The following contracts were entered into during 1985-86 (excluding building demolitions and sub-contracts).

<i>Contract No.</i>	<i>Description</i>	<i>Contract Price</i>
		\$
B-A/R-065	Algonia Main Road, Blackmans Bay to Channel Highway Road Construction, Stage 2 .	996 325.84
R-N/R-067	Bass Highway, Don Hill to Forth River, Road Construction, Stage 2 .	4 619 974.99
B-A/R-084	Lilydale Main Road, Underwood Deviation, Roadworks .	1 697 356.18
B-N/R-088	Prospect Bypass, Road Construction, Stage 1 .	1 413 960.00
B-N/B-090	Bass Highway, Burnie, Stage B, Oakleigh Crossing to View Road .	4 481 078.98
R-N/B-092	Meander River Bridge, Bass Highway, Deloraine Bypass .	1 945 543.86
R-N/R-096	Bass Highway, Forth River to Ulverstone Bypass, Service Roads .	667 896.33
B-A/B-098	Thistle Street Footbridge, Launceston Southern Outlet, Glen Dhu Corridor .	203 360.32
R-N/B-102	Turners Beach Road Overpass, Bass Highway .	1 221 073.90
R-N/R-103	East Tamar Highway, Newnham Road Improvements near Thomsons Lane .	177 230.00
R-N/R-104	Launceston Southern Outlet, Strathroy to Breadalbane, Junction Works at Breadalbane .	1 126 228.27
B-N/R-106	Prospect Bypass, Road Construction, Stage 2 .	962 300.00
R-N/R-110	Midland Highway, Vertical Curve Improvements near Cleveland .	765 880.00
B-N/R-119	Bass Highway, Burnie, Stage B, Supply of Road and Direction Signs and Fittings .	26 216.00
B-A/R-120	Replacement of Brick Sewer, Glen Dhu Corridor, Launceston Southern Outlet Road .	78 395.97
R-N/M-125	Midland Highway, Kempton to Melton Mowbray, Asphalt Surfacing .	252 586.00
P/SE-400	Tasman Bridge and Bowen Bridge, Navigation and Feature Lighting, Signal Gantry Power Supply Maintenance .	Schedule of Rates
R/SE-404	Hobart Southern Outlet Road, Zomay Avenue to Olinda Grove, Asphalt Surfacing .	362 548.00
		Monthly 1 191.66
R/SE-406	Tasman Bridge Tow Truck Service	Weekly 275.00
		Hourly 12.22
R-A/R-1019	Huon Outlet at Sandfly and Vines Saddle, Asphalt Paving .	183 110.00
R-S/E-1023	Hobart Southern Outlet Road, Zomay Avenue-Proctors Saddle, Supply and Lay Asphalt .	47 563.00
R-S/E-1025	Channel Highway, Junction with Southern Outlet Extension, Asphalt Paving .	50 456.00
R-S/E-1026	Lyell Highway, Granton to New Norfolk, Pavement Shape Connection .	77 522.00
R-S/E-1207	Domain Highway, Supply and Lay Asphalt Overlay .	116 317.48
R-S/E-1029	Brooker Highway, Dobson Street to Elwick Inlane, Supply and Lay Asphalt .	82 138.31
R-N/M-3042	Bass Highway, Supply and Lay Asphalt, Middle Road to Stoney Rise Turn-off, East bound Lanes including On-off Ramp Middle Road .	150 985.00
R-N/M-3043	Bass Highway, Reeve Street to Oakleigh Overpass, Westbound Lane, Supply and Lay Asphalt .	91 778.20
R-A/M-3044	Bass Highway-Togari, Supply and Lay Asphalt .	61 548.50
R-A/M-3045	Bass Highway-Dowlings Road West, Supply and Lay Asphalt .	82 404.00
R-A/M-3046	Murchison Highway, Hellyer Gorge, Supply and Lay Asphalt .	89 150.40

AGREEMENTS

Contracts below \$20 000 in value (\$30 000 for bituminous works) are usually the subject of a simplified form of contract termed 'agreements'. The following agreements were entered into during 1985-86:—

<i>Bridges</i>	<i>Sealing</i>	<i>Gravel</i>	<i>Others</i>	<i>Total</i>
North-West District	12	20	45	77
North-East District	1	4	30	35
South-East District	9	4	37	50
Head Office .....	....	2	15	17
TOTAL	22	30	127	179

STORES

The construction and plant stores requirements of the Department are managed through a decentralised stores system. There is a principal store at the main workshop complex at Moonah and major branch stores at the District Offices in Launceston and Ulverstone. The opening value of stores holdings was \$1 048 922 and the closing value on 30 June 1986 was \$981 217.

Period contract orders placed totalled 7 910 while 20 835 orders were processed through the Supply and Tender Department.

ACKNOWLEDGEMENT

I express my appreciation to the staff and employees of the Department for the manner in which they have responded to all demands placed upon them during the year. Although staff levels have been restricted for a number of reasons, the high level of Departmental activity has been handled by them in a most satisfactory manner.

On behalf of the Department, I extended thanks to all the State and Commonwealth Departments and Local Government bodies which have co-operated with or provided assistance to the Department during the year.

The operations of the Department would not be possible without the continued assistance of private enterprise, particularly in the form of consulting engineers, plant hire contractors and material suppliers. To all companies and individuals who have assisted the Department in 1985-86, I also wish to extend the Department's appreciation.

P. J. WETTENHALL, Acting Director of Main Roads.

ANNEXURE A

LOAN FUND EXPENDITURE 1985-86

1984-85 \$		1985-86 \$
	ROADS AND BRIDGES—	
900 000	Coles Bay Tourist Road .....	....
....	Falmouth to Chain of Lagoons Link Road	1 749 340
207 200	Flagstaff Gully Link Road	1 330 016
297 227	Glenorchy City Centre Bypass	580 129
1 558 771	Guildford to Hampshire Link Road	3 034 316
1 463 670	Henty Main Road .....	....
1 617 039	Hobart Southern Outlet	2 615 286
1 429 215	Huon Highway .....	....
3 290 410	Huon Outlet Road	1 048 184
684 360	Lake Highway .....	....
2 249 410	Que River to Learys Corner Link Road	2 702 374
217 737	Smithton to Zeehan Link Road	1 510 355
1 741 788	Tasman Highway .....	....
1 000 000	Refund to Consolidated Revenue for Administration	1 080 000
<u>16 656 827</u>	TOTAL (Roads and Bridges)	<u>15 650 000</u>
	OTHER WORKS—	
53 161	Launceston Flood Protection Scheme	200 000
185 045	Jetties and Facilities for Fishermen	157 548
53 173	Bruny Island Ferry Terminals—Construction .....	....
<u>1 155 488</u>	Upgrading of Fishing Ports	<u>969 770</u>
<u>1 446 867</u>	TOTAL (Other Works)	<u>1 327 318</u>
<u>18 103 694</u>	TOTAL (All Works)	<u>16 977 318</u>

ANNEXURE B

FINANCIAL ASSISTANCE TO LOCAL GOVERNMENT AUTHORITIES

1984-85 \$		1985-86 \$
	DIRECT GRANTS—	
1 156 245	Arterial Roads—Construction	269 926
	Local Roads—	
6 125 055	Construction	7 668 639
2 772 536	Maintenance	3 022 347
<u>10 053 836</u>		<u>10 960 912</u>
	Works on Council Roads Financed and Carried out by D.M.R.—	
2 407 072	Repair and Renewal of Bridges	2 643 696
473 923	Roadworks	1 429 773
<u>12 934 831</u>	TOTAL	<u>15 034 381</u>

ANNEXURE C
BITUMINOUS SURFACING COMPLETED 1984-85 (km)

Road	Hot Bitumen Sprayed Seal				
	Prime and Seal	Primer Seal	Flush Seal	Asphalt	Total
SOUTH-EAST DISTRICT—					
Arthur Highway	....	....	4.60	....	4.60
Channel Highway.....	....	0.43	....	0.43	0.86
Domain Highway.....	....	....	....	1.51	1.51
Huon Highway.....	0.21	0.54	4.90	....	5.65
Huon Outlet.....	....	....	5.00	5.00	10.00
Lake Highway.....	6.40	....	....	....	6.40
Lyell Highway.....	....	....	12.58	4.86	17.44
Midland Highway.....	....	....	....	2.38	2.38
Southern Outlet.....	....	2.92	2.69	5.66	11.27
Tasman Highway.....	....	....	4.73	....	4.73
Bruny Main Road.....	1.02	....	....	....	1.02
Colebrook Main Road.....	....	....	12.95	....	12.95
Elderslie Main Road.....	....	....	19.76	....	19.76
Fenton Main Road.....	....	....	0.52	....	0.52
Rokeby Main Road.....	....	....	0.68	....	0.68
Tunnack Main Road.....	....	1.50	....	....	1.50
Lachlan Secondary Road.....	....	0.13	....	....	0.13
Sandfly Secondary Road.....	....	....	7.35	....	7.35
NORTH-EAST DISTRICT—					
Bass Highway.....	....	....	....	1.10	1.10
East Tamar Highway.....	....	....	0.96	1.29	2.25
Midland Highway.....	....	....	2.19	0.89	3.08
Tasman Highway.....	3.44	0.60	....	2.76	6.80
West Tamar Highway.....	....	....	0.28	0.20	0.48
Blessington Main Road.....	....	....	9.88	....	9.88
Bridport Main Road.....	....	....	9.95	....	9.95
Esk Main Road.....	....	....	7.59	....	7.59
Frankford Main Road.....	....	....	....	0.34	0.34
Illawarra Main Road.....	....	....	....	1.36	1.36
Lake Leake Main Road.....	0.90	....	8.82	....	9.72
Poatina Main Road.....	....	....	3.87	4.10	7.97
Youl Main Road.....	....	....	....	1.21	1.21
Mathinna Secondary Road.....	....	....	5.61	0.34	5.95
Pipers River Secondary Road.....	....	....	....	0.84	0.84
Coles Bay Tourist Road.....	3.70	....	....	....	3.70
NORTH-WEST DISTRICT—					
Bass Highway.....	10.84	3.00	....	7.36	21.20
Lake Highway.....	5.06	....	3.42	....	8.48
Lyell Highway.....	....	....	....	4.50	4.50
Murchison Highway.....	....	....	8.58	1.90	10.48
Castra Main Road.....	....	....	2.85	....	2.85
Frankford Main Road.....	....	....	6.88	....	6.88
Henty Main Road.....	....	....	3.70	....	3.70
King Island Main Road.....	....	....	3.70	....	3.70
Preston Main Road.....	....	....	3.92	....	3.92
Sheffield Main Road.....	....	....	0.72	....	0.72
Wilmot Main Road.....	....	....	6.50	....	6.50
Creamery Secondary Road.....	....	....	3.60	....	3.60
Cradle Mountain Tourist Road.....	2.44	....	4.70	....	7.14
TOTALS.....	34.01	9.12	173.48	48.03	264.64

The following works were also carried out by the Department on Classified and Unclassified Roads. Because of various pavements widths, junction areas, etc. quantities are shown rather than lengths:—

Bass Highway—Stanley Street—905 tonnes Asphalt
 Brooker Avenue—In Lane—115 tonnes Asphalt
 East Tamar Highway—Thompson Lane—449 tonnes Asphalt
 Lyell Highway—108 tonnes Asphalt
 Midland Highway—301 tonnes Asphalt and 49 701 m² Flush Reseal
 West Tamar Highway—714 tonnes Asphalt and 16 954 m² Winter Seal
 Algona Main Road—2 275 tonnes Asphalt and 16 584 m² Primerseal
 Poatina Main Road—9 190 m² Winter Seal
 Flagstaff Gully Link Road—1 350 m² Primerseal
 King and Anthony Road Power Development—30.7 kms Prime and Seal Flush Reseal for H.E.C.
 Heemskirk Road—9.5 kms Prime and Seal for H.E.C.

ANNEXURE D

ROAD CONSTRUCTION PLANT SUSPENSE ACCOUNT

Income and Expenditure Statement for financial period 17 March 1985 to 29 March 1986

Period Ending 16.3.85 \$		Period Ending 29.3.86 \$
	INCOME—	
8 922 169	Plant Hire	9 893 753
7 003 431	Workshop Charges	7 796 306
166 417	Miscellaneous Income	133 855
164 370	Net Profit on Sale of Surplus Plant	130 676
<u>16 256 387</u>	TOTAL	<u>17 945 590</u>
	EXPENDITURE—	
7 568 114	Plant Operation and Maintenance	8 433 979
6 258 419	Workshop Operations	6 536 516
1 875 761	Plant Depot Administration and Maintenance	2 067 994
1 145 450	Depreciation of Plant and Equipment	1 014 111
20 537	Depreciation on Land and Buildings	21 518
<u>16 868 281</u>		<u>18 074 118</u>
611 894	Excess of over Expenditure over Income for Period	119 528
<u>16 256 387</u>	TOTAL	<u>17 954 590</u>

ROAD CONSTRUCTION PLANT SUSPENSE ACCOUNT

Balance Sheet as at 29 March 1986

1985 \$		1986 \$
	NATURE AND SOURCE OF FUNDS USED—	
	Funds provided by State Treasurer—	
194 607	Valuation of Plant and Equipment held at 30 June 1945 and Stock on Hand held at 30 June 1946	194 607
3 140 730	Loan Funds	3 140 730
6 769	Commonwealth Grants	6 769
326 897	State Highways Trust Fund	611 897
3 494 672	General Reserve for Increased Cost of Plant Replacement	3 423 274
1 032 535	Accumulation Account	984 405
	Current Liabilities—	
....	Cash at Treasury	4 664
722 645	Accrued Expenses	652 265
	Provisions—	
5 815	Plant Accident Insurance .....	....
<u>8 924 670</u>		<u>9 018 611</u>
	THESE FUNDS ARE REPRESENTED BY—	
	Current Assets—	
375 718	Cash at Treasury .....	....
120 626	Work in Progress—Deferred Charges	425 490
691 530	Accrued Charges—Plant Hire	701 621
560 957	Accrued Charges—Workshops	506 407
6 349	Accrued Charges—Apprentice Tool Kits	7 816
<u>1 755 180</u>		<u>1 641 334</u>
	FIXED ASSETS—	
1 607 501	Land and Buildings	1 677 132
362 761	Less Provision for Depreciation	384 279
<u>16 563 386</u>		<u>1 292 853</u>
10 638 636	Plant and Equipment	17 378 059
	Less Provision for Depreciation	11 293 635
		<u>6 084 424</u>
<u>8 924 670</u>	TOTAL	<u>9 018 611</u>

ROAD CONSTRUCTION PLANT SUSPENSE ACCOUNT

Statement of Source and Application of Funds for financial period 17 March 1985 to 29 March 1986

1985 \$		1986 \$
	SOURCE OF FUNDS—	
1 165 987	Non-Cash Item Depreciation.....	1 035 629
1 165 987		1 035 629
164 370	Less Net Profit on Sale of Plant	130 634
1 001 617		904 995
1 393 762	Decrease in Working Capital	42 315
....	Contribution from State Highways Trust Fund.....	285 000
553 869	Proceeds from Sale of Plant	529 347
2 949 248	TOTAL	1 761 657
	APPLICATION OF FUNDS—	
611 893	Loss from Operations.....	119 528
4 809	Decrease in Plant Accident Insurance Provision .....	....
10 073	Decrease in Motor Vehicle Insurance Provision.....	....
29 735	Improvements to Depots	69 632
481 185	Purchase of New Plant	577 929
1 711 264	Purchase of Replacement Plant	927 695
100 289	Purchase of Workshop Equipment and Tools	66 873
2 949 248	TOTAL	1 761 657



CLASSIFIED ROAD SYSTEM





Front Cover
CRADLE MOUNTAIN LINK ROAD
Across Black Bluff Range

Inside Back Cover
ALGONA MAIN ROAD

Back Cover
GEORGES BAY
Training Wall
St Helens



